

SOLICITATION, OFFER AND AWARD		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350)		RATING DO-C9	PAGE OF 1 42 PAGES
2. CONTRACT NO.		3. SOLICITATION NO. N00173-01-R-JW01		4. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (DFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	5. DATE ISSUED 06 Dec 00
7. ISSUED BY CONTRACTING OFFICER NAVAL RESEARCH LABORATORY ATTN: CODE 3230.JW WASHINGTON DC 20375-5326		CODE N00173		6. REQUISITION/PURCHASE NO. 81-8034-00	
8. ADDRESS OFFER TO (If other than Item 7)					

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

SOLICITATION

9. Sealed offers in original and 1 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in Building 222, Room 115 until 4:00pm local time 05 Jan 2001
(Hour) (Date)

CAUTION - LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-10. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:	A. NAME James P. Waldenfels	B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS) (202) 767-3003 waldenfels@contracts.nrl.navy.mil
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OFFER (Must be fully completed by offeror)

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT (See Section I, Clause No. 52-232-8)	10 CALENDAR DAYS	20 CALENDAR DAYS	30 CALENDAR DAYS	CALENDAR DAYS
	%	%	%	%
14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated:	AMENDMENT NO.		DATE	

15A. NAME AND ADDRESS OF OFFEROR	CODE	FACILITY	16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)
15B. TELEPHONE NO. (Include area code)			15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE.
			17. SIGNATURE
			18. OFFER DATE

AWARD (To be completed by Government)

19. ACCEPTED AS TO ITEMS NUMBERED	20. AMOUNT	21. ACCOUNTING AND APPROPRIATION
22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 U.S.C. 2304(c) () <input type="checkbox"/> 41 U.S.C. 253(c) ()		23. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)
24. ADMINISTERED BY (If other than Item 7) CODE		25. PAYMENT WILL BE MADE BY CODE
26. NAME OF CONTRACTING OFFICER (Type or print)		27. UNITED STATES OF AMERICA (Signature of Contracting Officer)
		28. AWARD DATE

IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

**PART I - THE SCHEDULE
SECTION B
SUPPLIES OR SERVICES AND PRICES/COSTS**

B-1 SUPPLIES/SERVICES AND COSTS

ITEM NUMBER	SUPPLIES/SERVICES	ESTIMATED COST	FIXED FEE	TOTAL EST. COST PLUS FIXED FEE
0001	The contractor shall perform space/aerospace systems research, development and implementation services as described in Section C.	\$**	\$**	\$**
0002	Data in accordance with Exhibit A (DD 1423).	* NSP	* NSP	* NSP
TOTAL ESTIMATED COST PLUS FIXED FEE FOR CLINS 0001 AND 0002		\$**	\$**	\$**
OPTION 1				
0003	The contractor shall perform space/aerospace systems research, development and implementation services as described in Section C.	\$**	\$**	\$**
0004	Data in accordance with Exhibit A (DD 1423).	* NSP	* NSP	* NSP
TOTAL ESTIMATED COST PLUS FIXED FEE FOR CLINS 0003 AND 0004		\$**	\$**	\$**

ITEM NUMBER	SUPPLIES/SERVICES	ESTIMATED COST	FIXED FEE	TOTAL EST. COST PLUS FIXED FEE
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OPTION 2

0005	The contractor shall perform space/aerospace systems research, development and implementation services as described in Section C.	\$**	\$**	\$**
0006	Data in accordance with Exhibit A (DD 1423).	* NSP	* NSP	* NSP

TOTAL ESTIMATED COST PLUS FIXED FEE
FOR CLINS 0005 AND 0006

\$**	\$**	\$**
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OPTION 3

0007	The contractor shall perform space/aerospace systems research, development and implementation services as described in Section C.	\$**	\$**	\$**
0008	Data in accordance with Exhibit A (DD 1423).	* NSP	* NSP	* NSP

TOTAL ESTIMATED COST PLUS FIXED FEE
FOR CLINS 0007 AND 0008

\$**	\$**	\$**
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OPTION 4

0009	The contractor shall perform space/aerospace systems research, development and implementation services as described in Section C.	\$**	\$**	\$**
0010	Data in accordance with Exhibit A (DD 1423).	* NSP	* NSP	* NSP

TOTAL ESTIMATED COST PLUS FIXED FEE
FOR CLINS 0009 AND 0010

\$**	\$**	\$**
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ITEM NUMBER	SUPPLIES/SERVICES	ESTIMATED COST	FIXED FEE	TOTAL EST. COST PLUS FIXED FEE
TOTAL ESTIMATED COST PLUS FIXED FEE FOR CLINS 0001 THROUGH 0010, INCLUDING OPTIONS, IF EXERCISED				
		\$**	\$**	\$**

* Not Separately Priced

** To be entered by offeror.

Upon exercise of options, existing and newly exercised performance and data CLINS shall be joined.

SECTION C DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK

(2) STATEMENT OF WORK

The work and services to be performed hereunder shall be subject to the requirements and standards contained in Attachment (1), Statement of Work, with Exhibit A, Contract Data Requirements List, and all other Attachments cited in Section J, which are incorporated by reference into Section C.

(3) REQUIREMENTS FOR ON-SITE CONTRACTORS

For those portions of the work under this contract performed at any NRL site, the contractor shall comply with the Requirements for On-Site Contractors dated 11 April 2000 which are hereby incorporated by reference. The full text is available at <http://heron.nrl.navy.mil/contracts/home.htm>.

(4) SUBCONTRACTING PLAN

Subcontracting Plan dated is hereby incorporated by reference and made a material part of this contract.

*(*this provision will be included and completed at time of award, if applicable)*

SECTION D
PACKAGING AND MARKING

D-1 PACKAGING AND MARKING

Preservation, packaging, packing and marking of all deliverable contract line items must conform to normal commercial packing standards to assure safe delivery at destination.

SECTION E
INSPECTION AND ACCEPTANCE

E-1 INSPECTION AND ACCEPTANCE CLAUSES INCORPORATED BY REFERENCE

<u>FAR CLAUSE</u>	<u>TITLE</u>
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52.246-8	- Inspection Of Research And Development - Cost Reimbursement (APR 1984)
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E-2 INSPECTION AND ACCEPTANCE

Inspection and acceptance of the final delivery will be accomplished by the Technical Manager (TM) or Contracting Officer Representative (COR) designated in Section G of this contract. Inspection and acceptance will be performed at the Naval Research Laboratory, Washington DC 20375-5320.

SECTION F
DELIVERIES OR PERFORMANCE

F-1 DELIVERIES OR PERFORMANCE CLAUSES INCORPORATED BY REFERENCE:

<u>FAR CLAUSE</u>	<u>TITLE</u>
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52.242-15	- Stop-Work Order (AUG 1989) - Alternate I (APR 1984)
52.247-34	- F.O.B. Destination (NOV 1991)

F-2 PERIOD AND PLACE OF PERFORMANCE

- (a) The term of this contract is as follows:
- The term of this contract for Items 0001 and 0002 is from the date of award of the contract through one year after the date of award.
 - If and when Option 1 is exercised, the term of Items 0003-0004 shall be from the date of award of the basic contract through two years after the date of award of the basic contract.
 - If and when Option 2 is exercised, the term of Items 0005-0006 shall be from the date of award of the basic contract through three years after the date of award of the basic contract.
 - If and when Option 3 is exercised, the term of Items 0007-0008 shall be from the date of award of the basic contract through four years after the date of award of the basic contract.
 - If and when Option 4 is exercised, the term of Items 0009-0010 shall be from the date of award of the basic contract through five years after the date of award of the basic contract .
- (b) The principal place of performance of this contract shall be at the Contractor's facility.

SECTION G
CONTRACT ADMINISTRATION DATA

G-1 PROCURING OFFICE REPRESENTATIVE

In order to expedite administration of the contract, the Administrative Contracting Officer (ACO) will direct inquiries to the appropriate office listed below. Please do not direct routine inquiries to the person listed in Item 20A on Standard Form 26.

Contract Matters- *

Security Matters- *

Safety Matters- *

Patent Matters- *

Release of Data- *

The ACO will forward invention disclosures and reports directly to the Associate Counsel for Patents, Code 1008.2, Naval Research Laboratory, Washington DC 20375-5320. The Associate Counsel for Patents will return the reports along with a recommendation to the Administrative Contracting Officer. The Associate Counsel for Patents will represent the Contracting Officer with regard to invention reporting matters arising under this contract.

*(* To be completed at time of award)*

G-2 CONTRACTING OFFICER'S REPRESENTATIVE (COR) - FUNCTIONS AND LIMITATIONS

* is hereby designated the cognizant COR who will represent the Contracting Officer in the administration of technical details within the scope of this contract and inspection and acceptance. The COR is not otherwise authorized to make any representations or commitments of any kind on behalf of the Contracting Officer or the Government. The COR does not have the authority to alter the Contractor's obligations or change the specifications in the contract. If, as a result of technical discussions, it is desirable to alter contract obligations or statements of work, a modification must be issued in writing and signed by the Contracting Officer. The COR is responsible for reviewing the bills and charges submitted by the Contractor and informing the ACO of areas where exceptions are to be taken.

*(* To be completed at time of award)*

G-3 TECHNICAL DIRECTION MEMORANDUM (TDM)

- (a) For the purposes of this clause, technical direction includes the following:
 - (1) Direction to the Contractor which shifts work emphasis between work areas or tasks, requires pursuit of certain lines of inquiry, fills in details or otherwise describes work which will accomplish the objectives described in the statement of work;
 - (2) Guidelines to the Contractor which assist in interpretation of drawings, specifications or technical portions of work description.
- (b) Technical instructions must be within the scope of work stated in the contract. Technical instructions may not be used to:
 - (1) Assign additional work under the contract;
 - (2) Direct a change as defined in the contract clause entitled "Changes";

- (3) Increase or decrease the estimated contract cost, the fixed fee, or the time required for contract performance; or
- (4) Change any of the terms, conditions or specifications of the contract
- (c) The TDM shall be written by the Contracting Officer's Representative (COR), with the original given to the Contractor and a copy retained in the CORs file. Technical direction may be issued orally only in emergency situations. If technical direction is issued orally, a TDM must follow within two (2) working days from the date of the oral direction. Amendments, corrections, or changes to TDMs shall also be in written format and shall include all the information set forth in paragraph (e) below.
- (d) A TDM shall be considered issued when the Government deposits it in the mail, or if transmitted by other means, when it is physically delivered to the contractor.
- (e) TDMs shall include, but not be limited to, the following information:
 - (1) Date of TDM,
 - (2) Contract Number,
 - (3) Reference to the relevant portion or item in the Statement of Work,
 - (4) The specific technical direction or clarification, and
 - (5) The signature of the COR.
- (f) CORs shall retain all files containing TDMs for a period of two (2) years after the final contract completion date.
- (g) The only individual authorized in any way to amend or modify any of the terms of this contract shall be the Contracting Officer. When, in the opinion of the Contractor, any technical direction calls for effort outside the scope of the contract or inconsistent with this special provision, the Contractor shall notify the Contracting Officer in writing within ten (10) working days after its receipt.

G-4 SUBCONTRACTORS/CONSULTANTS

- (a) Advance notification or requests for consent pursuant to the contract clause entitled "Subcontracts" (FAR 52.244-2) shall be directed to the cognizant administrative contracting officer (ACO).
- (b) The following subcontractors/consultants have been identified in the Contractor's proposal as necessary for performance of this contract:

Subcontractor/Consultant Name

Estimated Cost

(Paragraph (b) will be included and filled in at time of award if subcontractor/consultants are proposed by the successful offeror)

G-5 NAPS 5252.232-9001 - SUBMISSION OF INVOICES (COST-REIMBURSEMENT, TIME-AND-MATERIALS, LABOR-HOUR, OR FIXED PRICE INCENTIVE (JUL 1992)

- (a) "Invoice" as used in this clause includes contractor requests for interim payments using public vouchers (SF 1034) but does not include contractor requests for progress payments under fixed price incentive contracts.
- (b) The Contractor shall submit invoices and any necessary supporting documentation, in an original and 4 copies, to the contract auditor at the following address:

(To be completed at time of award)

unless delivery orders are applicable, in which case invoices will be segregated by individual order and submitted to the address specified in the order. In addition, an information copy shall be submitted to [See Section G for designated COR]. Following verification, the contract auditor will forward the invoice to the designated payment office for payment in the amount determined to be owing, in accordance with

the applicable payment (and fee) clause(s) of this contract.

(c) Invoices requesting interim payments shall be submitted no more than once every two weeks, unless another time period is specified in the Payments clause of this contract. For indefinite delivery type contracts, interim payment invoices shall be submitted no more than once every two weeks for each delivery orders. There shall be a lapse of no more than 30 calendar days between performance and submission of an interim payment invoice.

(d) In addition to the information identified in the Prompt Payment clause herein, each invoice shall contain the following information, as applicable:

- (1) Contract line item number (CLIN)
- (2) Subline item number (SLIN)
- (3) Accounting Classification Reference Number(ACRN)
- (4) Payment terms
- (5) Procuring activity
- (6) Date supplies provided or services performed
- (7) Costs incurred and allowable under the contract
- (8) Vessel (e.g., ship, submarine or other craft) or system for which supply/service is provided

(e) A DD Form 250, "Material Inspection and Receiving Report",

☐ is required with each invoice submittal.

☒ is required only with the final invoice.

☐ is not required.

(f) A Certificate of Performance

☐ shall be provided with each invoice submittal.

☒ is not required.

(g) The Contractor's final invoice shall be identified as such, and shall list all other invoices (if any) previously tendered under this contract.

(h) Cost of performance shall be segregated, accumulated and invoiced to the appropriate ACRN categories to the extent possible. When such segregation of costs by ACRN is not possible for invoices submitted with CLIN/SLINS with more than one ACRN, an allocation ratio shall be established in the same ratio as the obligations cited in the accounting data so that costs are allocated on a proportional basis.

(The foregoing clause will be included in the contract unless the Contractor company is approved for direct submission of interim vouchers, in which case the following clause will be used.)

G-6 NAPS 5252.232-9001 - SUBMISSION OF INVOICES (COST-REIMBURSEMENT, TIME-AND-MATERIALS, LABOR-HOUR, OR FIXED PRICE INCENTIVE (JUL 1992)ALTERNATE II (DEC 1996)

(a) "Invoice" as used in this clause includes contractor requests for interim payments using public vouchers (SF 1034) but does not include contractor requests for progress payments under fixed price incentive contracts.

(b)(i) In accordance with DFARS 242-803(b)(i)(C), the cognizant Defense Contract Audit Agency (DCAA) auditor has authorized the contractor to submit interim invoices directly to paying offices. This authorization does not extend to the first and final invoices, which shall be submitted to the contract auditor at the following address:

(To be completed at time of award)

A copy of every invoice shall also be provided to the individual listed at the address shown in Section G for the Contracting Officer Representative(COR).

In addition, a copy of the final invoice shall be provided to the Administrative Contracting Officer (ACO).

(ii) Upon written notification to the contractor, DCAA may rescind its authorization for the contractor to submit invoices directly to paying offices. Upon receipt of such written notice, the contractor shall

immediately begin to submit all invoices to the contract auditor at the above address.

(iii) Notwithstanding (I) and (ii), when delivery orders are applicable, invoices shall be segregated by individual order and submitted to the addresses specified in the order.

(c) Invoices requesting interim payments shall be submitted no more than once every two weeks, unless another time period is specified in the Payments clause of this contract. For indefinite delivery type contracts, interim payment invoices shall be submitted no more than once every two weeks for each delivery order. There shall be a lapse of no more than 30 calendar days between performance and submission of an interim payment invoice.

(d) In addition to the information identified in the Prompt Payment clause herein, each invoice shall contain the following information, as applicable:

- (1) Contract line item number (CLIN)
- (2) Subline item number (SLIN)
- (3) Accounting Classification Reference Number(ACRN)
- (4) Payment terms
- (5) Procuring activity
- (6) Date supplies provided or services performed
- (7) Costs incurred and allowable under the contract
- (8) Vessel (e.g., ship, submarine or other craft) or system for which supply/service is provided

(e) A DD Form 250, "Material Inspection and Receiving Report",

- ☐ is required with each invoice submittal.
☒ is required only with the final invoice.
☐ is not required.

(f) A Certificate of Performance

- ☐ shall be provided with each invoice submittal.
☒ is not required.

(g) The Contractor's final invoice shall be identified as such, and shall list all other invoices (if any) previously tendered under this contract.

(h) Costs of performance shall be segregated, accumulated and invoiced to the appropriate ACRN categories to the extent possible. When such segregation of costs by ACRN is not possible for invoices submitted with CLINS/SLINS with more than once ACRN, an allocation ratio shall be established in the same ratio as the obligations cited in the accounting data so that costs are allocated on a proportional basis.

(This clause will be deleted in favor of the preceding clause unless the Contractor is approved for direct submission of interim vouchers.)

G-7 INCREMENTAL FUNDING

Pursuant to the Limitation of Funds clause (FAR 52.232-22), the total amount allotted to this contract is \$* and it is estimated that this amount is sufficient for contract performance through * .

*(*this provision will be included and completed at time of award, if applicable)*

**G-8 PAYMENT INSTRUCTIONS FOR MULTIPLE ACCOUNTING CLASSIFICATION CITATIONS
(COST-REIMBURSEMENT)**

The purpose of these instructions is to permit the paying office to charge the accounting classification citations in the contract in a manner that reflects the performance of the contract. These instructions do not create any obligation on the part of the Government or the contractor nor do they in any way alter any obligation created by any other provision of the contract. Invoices should be paid from available ACRNs in the following order:

- (a) ACRNs cited on the contractor's invoice.
- (b) On a proportional basis from any ACRNs assigned to funds which will cancel at the end of the current fiscal year.
- (c) The ACRN assigned to the following line of accounting:
97X4930.NH4A 000 77777 0 000173 2F 000000 N00173Z45000.
- (d) If funds appropriated in more than one fiscal year are allotted to the contract, the ACRN assigned to the oldest allotment of funds.
- (e) On a proportional basis from all ACRNs assigned to allotments of funds appropriated in a single fiscal year.

(*(Anticipated positions for key personnel are indicated. Offeror shall enter names, which will be confirmed at time of award)

***Nominated by offeror – mandatory*

****Nominated by offeror - voluntary)*

H-3 ONR 5252.216-9706 - LEVEL OF EFFORT (DEC 88) (MODIFIED SEP 99) [APPROVAL PENDING]

(a) The Contractor agrees to provide the total level of effort specified in the next sentences in performance of the work described in this contract. The total level of effort for performance of this contract shall be 360,000 total hours of direct labor for the base year.

- If and when Option 1 is exercised, the performance of Items 0001-0004 of this contract shall require an additional 360,000* hours for a total of 720,000* total hours of direct labor.
- If and when Option 2 is exercised, the performance of Items 0001-0006 of this contract shall require an additional 360,000* hours for a total of 1,080,000* total hours of direct labor.
- If and when Option 3 is exercised, the performance of Items 0001-0008 of this contract shall require an additional 360,000* hours for a total of 1,440,000* total hours of direct labor.
- If and when Option 4 is exercised, the performance of Items 0001-0010 of this contract shall require an additional 360,000* hours for a total of 1,800,000* total hours of direct labor.

These hours include subcontractor direct labor for those subcontractors specifically identified in the Contractor's proposal as having hours included in the proposed level of effort. A breakdown of labor categories and hours is set forth in paragraph (k) below.

(b) It is understood and agreed that the rate of hours per month may fluctuate in pursuit of the technical objective, provided such fluctuation does not result in the use of the total hours of effort prior to the expiration of the term of the contract.

(c) The Contractor is required to notify the Contracting Officer when 85% of the total level of effort has been expended.

(d) If, during the term of the contract, the Contractor finds it necessary to accelerate the expenditure of direct labor to such an extent that the total hours of effort specified would be used prior to the expiration of the term, the Contractor shall notify the Contracting Officer in writing, setting forth the acceleration required, the probable benefits which would result, and an offer to undertake the acceleration at no increase in the estimated cost or fixed fee together with an offer setting forth a proposed level of effort, cost breakdown, and proposed fixed fee for continuation of the work until expiration of the term hereof. The offer shall provide that the work proposed will be subject to the terms and conditions of this contract and any additions or changes required by then current law, regulations, or directives, and that the offer, with a written notice of acceptance by the Contracting Officer, shall constitute a binding contract. The Contractor shall not accelerate any effort until receipt of such written approval by the Contracting Officer. Any agreement to accelerate will be formalized by contract modification.

(e) The Contracting Officer may, by written order, direct the Contractor to accelerate the expenditure of direct labor such that the total hours of effort specified in paragraph (a) above would be used prior to the expiration of the term. This order shall specify the acceleration required and the resulting revised term. The Contractor shall acknowledge this order within five days of receipt.

(f) If the total level of effort specified in paragraph (a) above is not provided by the Contractor during the term of this contract, the Contracting Officer shall either (i) reduce the fixed fee of this contract as follows:

Fee Reduction = Fixed Fee X $\frac{\text{Required LOE Hours} - \text{Expended LOE Hours}}{\text{Required LOE Hours}}$

Required LOE Hours

or (ii) subject to the provisions of the clause of this contract entitled "Limitation of Cost," require the Contractor to continue to perform the work until the total number of hours of direct labor specified in paragraph (a) shall have been expended, at no increase in the fixed fee of this contract.

(g) In the event the government fails to fully fund the contract in a timely manner, the term of the contract may be extended accordingly with no change to cost or fee. If the government fails to fully fund the contract, the fee will be adjusted in direct proportion to that effort which was performed.

(h) Notwithstanding any of the provisions in the above paragraphs, the Contractor may furnish hours up to five percent in excess of the total hours specified in paragraph (a) above, provided that the additional effort is furnished within the term hereof, and provided further that no increase in the estimated cost or fixed fee is required. Notwithstanding any of the provisions in the above paragraphs, if the contractor has delivered at least 90% of the level of effort required in paragraph (a) above, adjustment in the fixed fee shall be as follows:

<u>Delivery of level of effort:</u>	<u>Fee Reduction</u>
At least 90% but less than 91%	90% of the reduction otherwise due per paragraph (f)(l).
At least 91% but less than 92%	80% of the reduction otherwise due per paragraph (f)(l).
At least 92% but less than 93%	60% of the reduction otherwise due per paragraph (f)(l).
At least 93% but less than 94%	40% of the reduction otherwise due per paragraph (f)(l).
At least 94% but less than 95%	20% of the reduction otherwise due per paragraph (f)(i).
At least 95%	No adjustment in the fixed fee shall be made.

(i) It is understood that the mix of labor categories provided by the Contractor under the contract, as well as the distribution of effort among those categories, may vary considerably from the initial mix and distribution of effort which was estimated by the government or proposed by the Contractor.

(j) Nothing herein shall be construed to alter or waive any of the rights or obligations of either party pursuant to the Clause entitled "Limitation of Costs" or "Limitation of Funds," either of which clauses as incorporated herein applies to this contract.

(k) The anticipated breakdown by labor category of the level of effort for the base year and through each option period is as follows:

<u>Labor Category</u>	<u>Hours for Basic Period</u>	<u>Hours Through Option 1</u>	<u>Hours Through Option 2</u>	<u>Hours Through Option 3</u>	<u>Hours Through Option 4</u>
Contract Line Items (CLINS)	0001- 0002	0001- 0004	0001- 0006	0001- 0008	0001- 0010
Program Manager	2,000	2,000	2,000	2,000	2,000
Senior Engineer	36,000	36,000	36,000	36,000	36,000
Senior Systems Analyst	32,000	32,000	32,000	32,000	32,000
Engineer	82,000	82,000	82,000	82,000	82,000
Senior Software Engineer	22,000	22,000	22,000	22,000	22,000
Software Engineer	36,000	36,000	36,000	36,000	36,000
Reliability Engineer	14,000	14,000	14,000	14,000	14,000
Technician	60,000	60,000	60,000	60,000	60,000
Documentation	14,000	14,000	14,000	14,000	14,000
Analyst	18,000	18,000	18,000	18,000	18,000
Clerical	44,000	44,000	44,000	44,000	44,000
Support Labor*	*	*	*	*	*
TOTAL*	**	**	**	**	**

*If it is the offeror's established practice to charge certain support labor (such as contracts, subcontract administration, administrative support) as a direct charge, a nominal amount of such support labor may be

proposed; pricing detail should match that provided for other labor. The total will be increased accordingly at the time of award. This note will be removed after entry of any proposed support labor upon award of the contract.

**The totals prior to addition of any support labor are:

Contract Line Items (CLINS)	0001-0002	0001-0004	0001-0006	0001-0008	0001-0010
Hours	360,000	360,000	360,000	360,000	360,000

This footnote will be deleted at award after incorporation of the total in the main table.

H-4 ONR 5252.235-9714 - REPORT PREPARATION (FEB 97)

Scientific or technical reports prepared by the Contractor and deliverable under the terms of this contract will be prepared in accordance with format requirements contained in ANSI/NISO Z39.18-1995, "Scientific and Technical Reports: Elements, Organization, and Design. "[NOTE: ANSI Z39.18 may be obtained from NISO Press Fulfillment Center, P. O. Box 338, Oxon Hill, MD. 20750-0338.Telephone 1-800-282-6476]

H-5 OPTION TO EXTEND TERM

This contract shall be renewable at the unilateral option of the Government by the Contracting Officer's notice of renewal to the Contractor within the existing term of the contract.

H-6 ON-SITE USE OF GOVERNMENT PROPERTY

It is anticipated that Government property will be used by the contractor's personnel in the performance of that portion of the contract performed on-site at the U.S. Naval Research Laboratory (NRL) including any of its field sites. Such use will be on a rent free basis and all such property shall be considered to remain in the possession and control of the NRL for property responsibility and accountability purposes.

H-7 GOVERNMENT-FURNISHED PROPERTY

The following Government property will be furnished to the contractor on a rent-free basis for use in performing the contract:

<u>Description</u>	<u>Part Number</u>
Universal Time Interval Counter*	HP-5370A
Tektronix Scope*	7104
Fluke RF Signal Generator*	6070A
Simulator and Testor PC Card for MIL-STD 1553 Bus*	
Emulator*	ADSP-2100
Network Analyzer w/t 6GHz Rcvr Option*	
HP Synthesizer*	HP8663A
DRC Bus Simulator*	
Mentor Graphics Idea Station*	HP28754A
Processor/Emulator*	ADDS-2100A-ICE
HP Synthesized Signal Generator*	8673C

*All equipment on this list may not be available at the commencement of the contract, but may become available sometime during performance of the contract. Some or all of it is currently committed to other effort, including NRL Contract N00173-99-D-6008.

(To be completed at time of award)

H-8 YEAR 2000 COMPLIANT INFORMATION TECHNOLOGY

This requirement applies to information technology (IT) that processes date-related information. All such IT delivered under this contract shall be Year 2000 compliant as defined at FAR 39.002.

H-9 REPRESENTATIONS AND CERTIFICATIONS

The Contractor's completed Representations, Certifications, and Other Statements of Offerors or Respondents is incorporated herein by reference in any resultant award.

H-10 SUBCONTRACTING PLAN

The contractor's Comprehensive Small Business Subcontracting Plan is incorporated into this contract in accordance with DFARS SUBPART 219.7 *Test Program for Negotiation of Comprehensive Small Business Subcontracting Plans*.

(Will be included at time of award if applicable.)

H-11 SMALL DISADVANTAGED BUSINESS TARGETS

Targets are as follows: *

*To be inserted at time of award per FAR 52.219-24.

PART II - CONTRACT CLAUSES
SECTION I
CONTRACT CLAUSES

I-1 52.252-2 - CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>

<http://heron.nrl.navy.mil/contracts/home.htm>

Clauses not applicable due to type of organization (e.g., commercial firm, small business firm, educational institution, etc.) will be deleted at award.

a. FEDERAL ACQUISITION REGULATION CLAUSES

<u>FAR CLAUSE</u>	<u>TITLE</u>
52.202-1	- Definitions (OCT 1995)
52.203-3	- Gratuities (APR 1984)
52.203-5	- Covenant Against Contingent Fees (APR 1984)
52.203-6	- Restrictions On Subcontractor Sales To The Government (JUL 1995)
52.203-7	- Anti-Kickback Procedures (JUL 1995)
52.203-8	- Cancellation, Rescission, And Recovery Of Funds For Illegal Or Improper Activity (JAN 1997)
52.203-10	- Price Or Fee Adjustment For Illegal Or Improper Activity (JAN 1997)
52.203-12	- Limitation On Payments To Influence Certain Federal Transactions (JUN 1997)
52.204-2	- Security Requirements (AUG 1996)
52.204-4	- Printed Or Copied Double-Sided On Recycled Paper (AUG 2000)
52.209-6	- Protecting The Government's Interest When Subcontracting With Contractors Debarred, Suspended, Or Proposed For Debarment (JUL 1995)
52.211-15	- Defense Priority And Allocation Requirements (SEP 1990)
52.215-2	- Audit And Records-Negotiation (JUNE 1999)
52.215-8	- Order Of Precedence - Uniform Contract Format (OCT 1997)
52.215-10	- Price Reduction For Defective Cost Or Pricing Data (OCT 1997)
52.215-11	- Price Reduction For Defective Cost Or Pricing Data - Modifications (OCT 1997)
52.215-12	- Subcontractor Cost Or Pricing Data (OCT 1997)
52.215-13	- Subcontractor Cost Or Pricing Data Modifications (OCT 1997)
52.215-14	- Integrity Of Unit Prices (OCT 1997)
52.215-15	- Pension Adjustments And Asset Reversions (DEC 1998)
52.215-17	- Waiver Of Facilities Capital Cost Of Money (OCT 1997) (will be included if the successful offeror does not propose facilities capital cost of money)
52.215-18	- Reversion Or Adjustment Of Plans For Post-Retirement Benefits (PRB) Other Than Pensions (OCT 1997)
52.215-19	- Notification Of Ownership Changes (OCT 1997)
52.215-21	- Requirements For Cost Or Pricing Data Or Information Other Than Cost or Pricing Data -Modifications (OCT 1997)
52.216-7	- Allowable Cost And Payment (MAR 2000)
52.216-8	- Fixed-Fee (MAR 1997)

- 52.219-4 - Notice Of Price Evaluation Preference For HUBZone Small Business Concerns (JAN 1999) ☐ Offeror elects to waive the evaluation preference.
- 52.219-8 - Utilization Of Small Business Concerns (OCT 2000)
- 52.219-9 - Small Business Subcontracting Plan (OCT 2000) - Alternate II (JAN 1999)
- 52.219-16 - Liquidated Damages-Subcontracting Plan (JAN 1999)
- 52.219-25 - Small Disadvantaged Business Participation Program-Disadvantaged Status And Reporting (OCT 1999)
- 52.222-1 - Notice To The Government Of Labor Disputes (FEB 1997)
- 52.222-2 - Payment For Overtime Premiums (JUL 1990) -The Use Of Overtime Is Authorized Under This Contract If The Overtime Premium Does Not Exceed "0"
- 52.222-20 - Walsh-Healey Public Contracts Act (DEC 1996)
- 52.222-21 - Prohibition of Segregated Facilities (FEB 1999)
- 52.222-26 - Equal Opportunity (FEB 1999)
- 52.222-29 - Notification Of Visa Denial (APR 1984) (DEVIATION)
- 52.222-35 - Affirmative Action For Disabled Veterans And Veterans Of The Vietnam Era (APR 1998)
- 52.222-36 - Affirmative Action For Workers With Disabilities (JUN 1998)
- 52.222-37 - Employment Reports On Disabled Veterans And Veterans Of The Vietnam Era (APR 1998)
- 52.223-3 - Hazardous Material Identification And Material Safety Data (JAN 1997)
- 52.223-5 - Pollution Prevention And Right-To-Know Information (APR 1998)
- 52.223-6 - Drug-Free Workplace (JAN 1997)
- 52.223-10 - Waste Reduction Program (AUG 2000)
- 52.223-14 - Toxic Chemical Release Reporting (OCT 2000)
- 52.225-13 - Restrictions On Certain Foreign Purchases (JUL 2000)
- 52.227-1 - Authorization And Consent (JUL 1995)- Alternate I (APR 1984)
- 52.227-2 - Notice And Assistance Regarding Patent And Copyright Infringement (AUG 1996)
- 52.227-10 - Filing Of Patent Application- Classified Subject Matter (APR 1984)
- 52.227-11 - Patent Rights - Retention By The Contractor (Short Form) (JUN 1997)
(will be included if the successful offeror is a small business or a non-profit organization)
- 52.227-12 - Patent Rights - Retention By The Contractor (Long Form) (JAN 1997)
(will be included if the successful offeror is not a small business or a non-profit organization)
- 52.228-7 - Insurance - Liability To Third Persons (MAR 1996)
- 52.230-2 - Cost Accounting Standards (APR 1998)
- 52.230-3 - Disclosure And Consistency Of Cost Accounting Practices (APR 1998)
- 52.230-5 - Cost Accounting Standards - Educational Institutions (APR 1998)
- 52.230-6 - Administration Of Cost Accounting Standards (NOV 1999)
- 52.232-9 - Limitation On Withholding Of Payments (APR 1984)
- 52.232-17 - Interest (JUN 1996)
- 52.232-20 - Limitation Of Cost (APR 1984) *(Applicable when the contract or task order is fully funded)*
- 52.232-22 - Limitation Of Funds (APR 1984) *(Applicable when the contract or task order is not fully funded)*
- 52.232-23 - Assignment Of Claims (JAN 1986) Alternate I (APR 1984)
- 52.232-25 - Prompt Payment (JUN 1997)
- 52.232-33 - Payment By Electronic Funds Transfer-Central Contractor Registration (MAY 1999)
- 52.233-1 - Disputes (DEC 1998) - Alternate I (DEC 1991)
- 52.233-3 - Protest After Award (AUG 1996) - Alternate I (JUN 1985)

- 52.237-2 - Protection Of Government Buildings, Equipment And Vegetation (APR 1984)
- 52.237-3 - Continuity Of Services (JAN 1991)
- 52.237-10 - Identification Of Uncompensated Overtime (OCT 1997)
- 52.242-1 - Notice Of Intent To Disallow Costs (APR 1984)
- 52.242-3 - Penalties For Unallowable Costs (OCT 1995)
- 52.242-4 - Certification Of Final Indirect Costs (JAN 1997)
- 52.242-13 - Bankruptcy (JUL 1995)
- 52.243-2 - Changes - Cost-Reimbursement (AUG 1987) - Alternate II (APR 1984)
- 52.244-2 - Subcontracts (AUG 1998) - Alternate I (AUG 1998)
- 52.244-5 - Competition In Subcontracting (DEC 1996)
- 52.244-6 - Subcontracts For Commercial Items And Commercial Components (OCT 1998)
- 52.245-5 - Government Property (Cost-Reimbursement, Time-And-Material, Or Labor-Hour Contracts) (JAN 1986) (DEVIATION)
- 52.245-18 - Special Test Equipment (FEB 1993)
- 52.245-19 - Government Property Furnished "As-Is" (APR 1984)
- 52.246-23 - Limitation Of Liability (FEB 1997)
- 52.246-25 - Limitation Of Liability - Services (FEB 1997)
- 52.247-1 - Commercial Bill Of Lading Notations (APR 1984)
- 52.247-63 - Preference For U. S. Flag Carriers (JAN 1997)
- 52.249-6 - Termination (Cost-Reimbursement) (SEP 1996)
- 52.249-14 - Excusable Delays (APR 1984)
- 52.251-1 - Government Supply Sources (APR 1984)
- 52.252-6 - Authorized Deviations in Clauses (APR 1984)(fill in Defense Federal Acquisition Regulation Supplement (48 CFR Chapter 2))
- 52.253-1 - Computer Generated Forms (JAN 1991)

b. DEPARTMENT OF DEFENSE FEDERAL ACQUISITION REGULATION CLAUSES

DFARS CLAUSE	TITLE
252.201-7000	- Contracting Officer's Representative (DEC 1991)
252.203-7001	- Prohibition On Persons Convicted Of Fraud Or Other Defense Contract Related Felonies (MAR 1999)
252.203-7002	- Display Of DoD Hotline Poster (DEC 1991)
252.204-7000	- Disclosure Of Information (DEC 1991)
252.204-7003	- Control Of Government Personnel Work Product (APR 1992)
252.204-7004	- Required Central Contractor Registration (MAR 2000)
252.204-7005	- Oral Attestation Of Security Responsibilities (AUG 1999)
252.205-7000	- Provision Of Information To Cooperative Agreement Holders (DEC 1991)
252.209-7000	- Acquisition From Subcontractors Subject To On-Site Inspection Under The Intermediate-Range Nuclear Forces (INF) Treaty (NOV 1995)
252.209-7004	- Subcontracting With Firms That Are Owned Or Controlled By The Government Of A Terrorist Country (MAR 1998)
252.215-7000	- Pricing Adjustments (DEC 1991)
252.215-7002	- Cost Estimating System Requirements (OCT 1998)
252.219-7003	- Small Business And Small Disadvantaged Business Subcontracting Plan (DoD Contracts) (APR 1996)
252.219-7004	- Small, Small Disadvantaged And Women-Owned Small Business Subcontracting Plan (Test Program) (JUN 1997)
252.223-7001	- Hazard Warning Labels (DEC 1991)
252.223-7004	- Drug-Free Work Force (SEP 1988)
252.223-7006	- Prohibition On Storage And Disposal Of Toxic And Hazardous Materials (APR 1993)

- 252.225-7001 - Buy American Act And Balance Of Payments Program (MAR 1998)
- 252.225-7002 - Qualifying Country Sources As Subcontractors (DEC 1991)
- 252.225-7009 - Duty Free Entry- Qualifying Country Supplies (End Products and Components) (AUG 2000)
- 252.225-7012 - Preference For Certain Domestic Commodities (AUG 2000)
- 252.225-7016 - Restriction On Acquisition Of Ball And Roller Bearings (AUG 1998)
- 252.225-7026 - Reporting Of Contract Performance Outside The United States (JUN 2000)
- 252.225-7031 - Secondary Arab Boycott Of Israel (JUN 1992)
- 252.225-7043 - Antiterrorism/Force Protection Policy For Defense Contractors Outside The United States (JUN 1998) (fill in : Naval Criminal Investigative Service (NCIS), Code 24, telephone, DSN 228-9113 or commercial (202)433-9113)
- 252.227-7000 - Non Estoppel (OCT 1966)
- 252.227-7001 - Release Of Past Infringement (AUG 1984)
- 252.227-7013 - Rights In Technical Data -- Noncommercial Items (NOV 1995)
- 252.227-7014 - Rights In Noncommercial Computer Software And Noncommercial Computer Software Documentation (JUN 1995)
- 252.227-7016 - Rights In Bid Or Proposal Information (JUN 1995)
- 252.227-7019 - Validation Of Asserted Restrictions--Computer Software (JUN 1995)
- 252.227-7025 - Limitations On The Use Or Disclosure Of Government-Furnished Information Marked With Restrictive Legends (JUN 1995)
- 252.227-7030 - Technical Data--Withholding Of Payment (MAR 2000)
- 252.227-7034 - Patents--Subcontracts (APR 1984)
- 252.227-7036 - Declaration Of Technical Data Conformity (JAN 1997)
- 252.227-7037 - Validation Of Restrictive Markings On Technical Data (SEP 1999)
- 252.227-7039 - Patents--Reporting Of Subject Inventions (APR 1990)
- 252.231-7000 - Supplemental Cost Principles (DEC 1991)
- 252.235-7010 - Acknowledgment Of Support And Disclaimer (MAY 1995)
- 252.235-7011 - Final Scientific Or Technical Report (SEP 1999)
- 252.242-7000 - Post Award Conference (DEC 1991)
- 252.242-7004 - Material Management And Accounting System (SEP 1996)
- 252.243-7002 - Requests For Equitable Adjustment (MAR 1998)
- 252.244-7000 - Subcontracts For Commercial Items And Commercial Components (DOD Contracts) (MAR 2000)
- 252.245-7001 - Reports Of Government Property (MAY 1994)
- 252.247-7023 - Transportation Of Supplies By Sea (MAR 2000)
- 252.247-7024 - Notification Of Transportation Of Supplies By Sea (MAR 2000)
(*will be included if the successful offeror made a negative response to the inquiry at DFARS 252.247-7022*)
- 252.251-7000 - Ordering From Government Supply Sources (MAY 1995)

I-2 FAR 52.223-11 - OZONE-DEPLETING SUBSTANCES (JUN 1996)

(a) Definitions.

“Ozone-depleting substance”, as used in this clause, means any substance designated as Class I by the Environmental Protection Agency (EPA) (40 CFR Part 82), including but not limited to chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or any substance designated as Class II by EPA (40 CFR Part 82), including but not limited to hydrochlorofluorocarbons.

(b) The Contractor shall label products which contain or are manufactured with ozone-depleting substances in the manner and to the extent required by 42 U.S.C. 7671j (b), (c), and (d) and 40 CFR Part

82, Subpart E, as follows:

"WARNING: Contains (or manufactured with, if applicable) _____, a substance(s) which harm(s) public health and environment by destroying ozone in the upper atmosphere."

* The Contractor shall insert the name of the substance(s).

I-3 DFARS 252.225-7008 - SUPPLIES TO BE ACCORDED DUTY- FREE ENTRY (MAR 1998)

In accordance with paragraph (b) of the Duty-Free Entry clause of this contract, in addition to duty-free entry for all qualifying country supplies (end products and components) and all eligible end products subject to applicable trade agreements (if this contract contains the Buy American Act - Trade Agreements - Balance of Payments Program clause or the Buy American Act - North American Free Trade Agreement Implementation Act - Balance of Payments Program clause), the following foreign end products that are neither qualifying country end products nor eligible end products under a trade agreement, and the following nonqualifying country components, are accorded duty free entry.

PART III - LIST OF DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS
SECTION J
LIST OF ATTACHMENTS

- J-1** Attachment (1) - Statement Of Work -26 Pages, With Exhibit A - DD Form 1423, Contract Data Requirements List, 8 Pages.
- J-2** Attachment (2) - DD Form 254, Contract Security Classification Specification, Ser 022-00 Dated 000511 - 2 Pages.
- J-3** Attachment (3) – Personnel Qualifications, 7 Pages.
- J-4** Attachment (4) Format For Non-Key Personnel Qualifications, 9 Pages
- J-5** Attachment (5) – Accounting and Appropriation Data- 1 page. *
- (* To be included at time of award)*

PART IV - REPRESENTATIONS AND INSTRUCTIONS
SECTION - K
REPRESENTATIONS, CERTIFICATIONS
AND OTHER STATEMENTS OF OFFERORS OR RESPONDENTS

K-1 Representations, Certifications, and Other Statements of Offerors or Respondents

Each Offeror must submit a completed Representations, Certifications, and Other Statements Of Offerors or Respondents with its proposal which is available electronically in full text at <http://heron.nrl.navy.mil/contracts/rep&certs.htm>

K-2 FILL IN FOR FAR 52.219-1 - SMALL BUSINESS PROGRAM REPRESENTATIONS (OCT 2000)

The fill in information is as follows:

The NAICS code for this acquisition is 541710.

The small business size standard is 500 employees.

SECTION L
INSTRUCTIONS CONDITIONS AND NOTICES
TO OFFERORS OR RESPONDENTS

L-1 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>
<http://heron.nrl.navy.mil/contracts/home.htm>

FAR CLAUSE	TITLE
52.204-6	- Data Universal Numbering System (DUNS) Number (JUNE 1999)
52.211-2	- Availability Of Specifications Listed In The DOD Index Of Specifications And Standards (DoDISS) And Descriptions Listed In The Acquisition Management Systems And Data Requirements Control List, DoD 5010.12-L (DEC 1999)
52.211-3	Availability of Specifications Listed in the DoD Index of Specifications and Standards (DoDISS) and Descriptions Listed in the Acquisition Management Systems and Data Requirements Control List, DoD 5010.12-L (DEC 1999)
52.215-1	- Instructions To Offerors- Competitive Acquisition (FEB 2000)
52.215-1	- Instructions To Offerors- Competitive Acquisition (FEB 2000) Alternate II (OCT 1997)
52.215-5	- Facsimile Proposals (OCT 1997) (Transmission of facsimile proposal information is authorized only where specifically authorized in writing by the Contracting Officer and specifically is <u>not</u> authorized for initial submission of the proposal. It is authorized for transmission of resumes as a result of "spot check" requests by the Government and for supplementary cost information requested by the Government.)
52.215-16	- Facilities Capital Cost Of Money (OCT 1997)
52.219-24	- Small Disadvantaged Business Participation Program - Targets (JAN 1999)
52.222-24	- Preaward On-Site Equal Opportunity Compliance Evaluation (FEB 1999)
52.237-1	- Site Visit (APR 1984)
52.252-5	- Authorized Deviations In Provisions (APR 1984)
252.204-7001	- Commercial And Government Entity (CAGE) Code Reporting (AUG 1999)
252.211-7005	- Substitutions For Military Or Federal Specifications And Standards (AUG 2000)

**AVAILABILITY FOR EXAMINATION OF SPECIFICATIONS NOT LISTED IN THE GSA INDEX OF
FEDERAL SPECIFICATIONS, STANDARDS AND COMMERCIAL ITEM DESCRIPTIONS (JUNE
1988)**

(Activity) Naval Research Laboratory (Contracting Division, Code 3200)

(Complete address) 4555 Overlook Avenue, SW
Washington, DC 20375-5326

(Telephone number) (202) 767-3003

(Person to be contacted) James P. Waldenfels, waldenfels@contracts.nrl.navy.mil
Please make appointment before December 20, 2000.

(Time(s) for viewing) By appointment. Suggested hours: 7:30 AM – 4:00 PM.

L-3 FAR 52.211-14 - NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be a ☐ DX rated order; ☒ DO rated order certified for national use under the Defense Priorities and Allocations system (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation.

L-4 FAR 52.215-20 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (OCT 1997)ALTERNATE IV (OCT 1997)

(a) Submission of cost or pricing data is not required.

Provide information described below

See L-15, Volume II – Business Proposal.

L-5 FAR 52.216-1 - TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a Cost Plus Fixed Fee (Term) contract resulting from this solicitation.

L-6 FAR 52.233-2 - SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in Section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO) shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from the Control Desk, Code 3200, Bldg. 222, Rm. 115, Naval Research Laboratory, 4555 Overlook Ave., S.W., Washington DC 20375-5326.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

L-7 DFARS 252.227-7017 - IDENTIFICATION AND ASSERTION OF USE, RELEASE, OR DISCLOSURE RESTRICTIONS (JUN 1995)

- (a) The terms used in this provision are defined in following clause or clauses contained in this solicitation--
- (1) If a successful offeror will be required to deliver technical data, the Rights in Technical Data--Noncommercial Items clause, or, if this solicitation contemplates a contract under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause.
 - (2) If a successful offeror will not be required to deliver technical data, the Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation clause, or, if this solicitation contemplates a contract under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause.
- (b) The identification and assertion requirements in this provision apply only to technical data, including computer software documents, or computer software to be delivered with other than unlimited rights. For contracts to be awarded under the Small Business Innovative Research Program, the notification requirements do not apply to technical data or computer software that will be generated under the resulting contract. Notification and identification is not required for restrictions based solely on copyright.
- (c) Offers submitted in response to this solicitation shall identify, to the extent known at the time an offer is submitted to the Government, the technical data or computer software that the Offeror, its subcontractors or suppliers, or potential subcontractors or suppliers, assert should be furnished to the Government with restrictions on use, release, or disclosure.
- (d) The Offeror's assertions, including the assertions of its subcontractors or suppliers or potential subcontractors or suppliers shall be submitted as an attachment to its offer in the following format, dated and signed by an official authorized to contractually obligate the Offeror:
 Identification and Assertion of Restrictions on the Government's Use, Release, or Disclosure of Technical Data or Computer Software.
 The Offeror asserts for itself, or the persons identified below, that the Government's rights to use, release, or disclose the following technical data or computer software should be restricted:

Technical Data or Computer Software to be Furnished With Restrictions*	Basis for Assertion**	Asserted Rights Category***	Name of Person Asserting Restrictions****
(LIST)*****.	(LIST)	(LIST)	(LIST)

* For technical data (other than computer software documentation) pertaining to items, components, or processes developed at private expense, identify both the deliverable technical data and each such items, component, or process. For computer software or computer software documentation identify the software or documentation.

** Generally, development at private expense, either exclusively or partially, is the only basis for asserting restrictions. For technical data, other than computer software documentation, development refers to development of the item, component, or process to which the data pertain. The Government's rights in computer software documentation generally may not be restricted. For computer software, development refers to the software. Indicate whether

development was accomplished exclusively or partially at private expense. If development was not accomplished at private expense, or for computer software documentation, enter the specific basis for asserting restrictions.

- *** Enter asserted rights category (e.g., government purpose license rights from a prior contract, rights in SBIR data generated under another contract, limited, restricted, or government purpose rights under this or a prior contract, or specially negotiated licenses).
- **** Corporation, individual, or other person, as appropriate.
- ***** Enter "none" when all data or software will be submitted without restrictions.

Date _____

Printed Name and Title _____

Signature _____

(End of identification and assertion)

- (e) An offeror's failure to submit, complete, or sign the notification and identification required by paragraph (d) of this provision with its offer may render the offer ineligible for award.
- (f) If the Offeror is awarded a contract, the assertions identified in paragraph (d) of this provision shall be listed in an attachment to that contract. Upon request by the Contracting Officer, the Offeror shall provide sufficient information to enable the Contracting Officer to evaluate any listed assertion.

L-8 DFARS 252.227-7028 - TECHNICAL DATA OR COMPUTER SOFTWARE PREVIOUSLY DELIVERED TO THE GOVERNMENT (JUN 1995)

The Offeror shall attach to its offer an identification of all documents or other media incorporating technical data or computer software it intends to deliver under this contract with other than unlimited rights that are identical or substantially similar to documents or other media that the Offeror has produced for, delivered to, or is obligated to deliver to the Government under any contract or subcontract. The attachment shall identify - -

- (a) The contract number under which the data or software were produced;
- (b) The contract number under which, and the name and address of the organization to whom, the data or software were most recently delivered or will be delivered; and
- (c) Any limitations on the Government's rights to use or disclose the data or software, including, when applicable, identification of the earliest date the limitations expire.

L-9 GOVERNMENT-FURNISHED PROPERTY

No material, labor, or facilities will be furnished by the Government unless provided for in the solicitation.

L-10 MATERIAL, SUPPLIES, AND EQUIPMENT ESTIMATE

The estimate set forth below, plus any applicable indirect costs, must be included in each offeror's cost proposal, for evaluation purposes only. (As usual under cost plus fixed fee contracts, the contractor will be reimbursed allocable, allowable and reasonable material costs incurred in contract performance.)

<u>First Year</u>	<u>Second Year</u>	<u>Third Year</u>	<u>Fourth Year</u>	<u>Fifth Year</u>
\$1,200,000	\$1,236,000	\$1,273,080	\$1,311,272	\$1,350,611

The offeror must allocate this estimate to appropriate cost sub-elements in the offeror's (subcontract offeror's) accounting system. The offeror may use the following Government estimate for the allocation of these sub-elements, or may use an allocation based on its own experience/"make or buy" practices. If the offeror elects to base the estimate on its own experience and practices, a brief explanation of the basis and supporting rationale should be provided.. Note that these amounts are in addition to any amounts for subcontracts, consultant costs, etc. for personnel to fill required positions.

<u>Sub-element</u>	<u>First Year</u>	<u>Second Year</u>	<u>Third Year</u>	<u>Fourth Year</u>	<u>Fifth Year</u>
Raw (1)	\$180,000	\$185,400	\$190,962	\$196,691	\$202,592
Parts (2) and (3)	720,000	741,600	763,848	786,763	810,366
Assemblies (3)	300,000	309,000	318,270	327,818	337,653
Total	\$1,200,000	\$1,236,000	\$1,273,080	\$1,311,272	\$1,350,611

- (1) Raw and processed materials and manufactured stock of all types of material including forging/castings; formed and drawn items; bulk and filler material; composites and laminates; steel stocks; insulating, isolating and conducting material; gasses and fluids of all types; and other items.
- (2) Parts, components and low-level manufactured items including: bolts, screws, nuts, washers, rivets, hinges, inserts, etc.; all electronic components/piece-parts and similar items; wire, cable, connectors, terminations and related items; sensors/transducers of all types; valves, filters, couplers of all types; and other items.
- (3) Subassemblies including: chips, electronics boards and modules; ordnance mechanisms and devices; accelerometers and related sensors; pumps, motors, solenoids and other actuators; and other items.
- (4) Assemblies, equipment, black boxes, subsystems of all types.

L-11 TRAVEL ESTIMATE

The yearly travel estimate set forth below must be included in each offeror's cost proposal, for evaluation purposes only (total \$1,752,015). (The yearly travel estimates should not be broken out into further components, such as air fare or per diem.) (As usual under cost plus fixed fee contracts, the contractor will be reimbursed allowable, allocable and reasonable travel costs incurred in contract performance.)

<u>First Year</u>	<u>Second Year</u>	<u>Third Year</u>	<u>Fourth Year</u>	<u>Fifth Year</u>
\$330,000	\$339,900	\$350,097	\$360,600	\$371,418

L-12 INQUIRIES CONCERNING THE RFP

Any questions concerning the RFP must be submitted to waldenfels@contracts.nrl.navy.mil with a copy to adams@contracts.nrl.navy.mil by December 18, 2000, with follow-up in writing to the Contracting Officer at the location noted in blocks 7 and 9 of the Standard Form 33, "Solicitation, Offer and Award," After this date, the Government will weigh the interests of an efficient competition, fairness to other potential offerors, and the opportunity for timely submission against the criticality of the question in determining whether to address late questions. The Government is predisposed not to respond to questions received after this date. Offerors are cautioned against directing any questions concerning this RFP to technical personnel at the Naval Research Laboratory.

L-13 INSTRUCTIONS FOR SUBMISSION AND INFORMATION REQUIRED TO EVALUATE PROPOSALS

- (1) Information for the technical/management proposal shall be placed in Volume I and be completely separate from the business proposal (Volume II).
- (2) Proposal Identification/Mailing - The proposal should be packaged for delivery so as to permit safe and timely arrival at destination. The proposal package should be sent to the address shown in Block 7 of the RFP face page and marked:

Solicitation No. N00173-01-R-JW01
Closing Date:
(As specified in Block 9, RFP face page)
Attn: Code 3230.JW

- (3) Proposal Format and Length - No attempt is made to restrict the proposal format and style, with the exception of several requirements specified in the following provisions that address the technical/management proposal and the business proposal. However, the proposal should be written and organized so as to be compatible with the RFP, the Statement of Work, company's organization and accounting structure, and proposed cost estimate. Offerors are encouraged to use recycled paper and maximize the use of double sided copying when preparing responses to solicitations. The technical proposal (excluding any preface (brief), table of contents, introductory lists (of acronyms, figures, tables, and illustrations), resumes, and any table(s) of personnel versus SOW or personnel requirements) shall not exceed 250 single-sided pages in length. (Note, as also mentioned below, offerors are not required to address their understanding of, approaches to, or experience with all tasks; the focus is on significant tasks and experience, as further described in the following provision, and not on routine tasks. This is intended to reduce proposal text, effort and cost.) Proposals shall be typed with a minimum type size of 12 pitch (exclusive of normally smaller text such as subscripts). Excess pages will not be read or evaluated, with selection of excess text made by the NRL Contracting Division.

L-14 VOLUME I - TECHNICAL/MANAGEMENT PROPOSAL

REQUIRED COPIES: 1 ORIGINAL AND 3 COPIES.

(1) Include a matrix indicating proposed labor hours by skill category required to perform the statement of work. Describe the equivalence of RFP labor categories to your labor categories. This matrix shall not contain labor rates or any other indication of price. The offeror must propose using the level of effort breakdown identified in Section H of the RFP, treating each option period as a separate additional year.

(2) The following information is required for evaluation of your technical/management proposal: Note that effective presentation of information is part of the context of evaluation for each area.

1. EXPERIENCE BASED TECHNICAL UNDERSTANDING

This factor will be based on the offeror's understanding of the Statement of Work, including its requirements as well as key aspects of its technical basis, its knowledge base, typical approaches, typical issues, handling unusual and critical problems, and other practical aspects. The offeror's evidence of this understanding should demonstrate competence; conceptual soundness; and logical and feasible key methodological approaches. The proposal should make clear how this experience based technical understanding will be transfused via proposed personnel or otherwise into this project. Evidence of effective innovation is welcome. The evidence should make clear whether the proposal will satisfy or exceed the requirements of the Statement of Work.

As noted above, offerors are not required to address their understanding of all tasks or their experience with all tasks; the focus is on significant tasks and experience, as further described in the following provision, and not on lower-level routine tasks where competence can be assumed. However, it is desired that significant unusual efficiencies or benefits to the program in routine, lower level areas be addressed.

In support of all technical understanding, describe experience over the past five years. Include a table summarizing experience over the past five years. The table should include the name of the customer, contract number, the name and phone number of the Government's Contracting Officer's Representative or the commercial customer's program manager, Contracting Officer or commercial equivalent and phone number, a short description of the effort, dates of effort, the dollar value, the type of contract, and other pertinent information. Include proposals for all major subcontractors with the same type of information.

The offeror shall divide the discussion of experience based technical understanding into the following areas:

(Note that Program Management, SOW Task 1, should be discussed under Factor 2, "Management Approach, Corporate and Facilities," below.)

Systems Engineering:

The offeror shall demonstrate capability to perform systems engineering functions,

particularly including

- (a) analysis of complete space and aerospace systems from a wholistic viewpoint;
- (b)) definition of system interfaces,
- (c) tracking of system requirements,
- (d) modification of existing systems to perform new missions, and
- (e) performance of Integrated Logistics Support (ILS) activities for both CONUS and OCONUS systems.

Give specific examples of past system engineering efforts related to Low Earth Orbiting Satellites and aerospace electronics involving the Tactical Internet.

Systems Design and Development:

The offeror shall

- (a) demonstrate its capability in designing, developing, testing and documenting high reliability electronics systems for space and aerospace environments;
- (b) demonstrate its capability and technical depth in developing electronic systems ranging from command and telemetry systems to spacecraft experimental payloads;
- (c) demonstrate its experience in developing electronic systems for Low Earth Orbiting (LEO) satellites under tight program schedule and budget constraints;
- (d) demonstrate its ability to respond quickly to new requirements; and
- (e) demonstrate its software development process, including its methodology for process identification and improvement.

Systems Effectiveness:

The offeror shall

- (a) demonstrate capability to evaluate and characterize inherent and achieved Reliability, Maintainability, and Availability (RMA) characteristics of both space and aerospace systems;
- (b)) demonstrate their procedures and process for incorporating RMA recommendation analyses into their designs; and
- (c) provide specific examples of having performed these activities on other programs, of having provided recommendations to the design staff, and of having performed trade-offs in regard to the proposed design and the RMA recommendations.

Fabrication Activities:

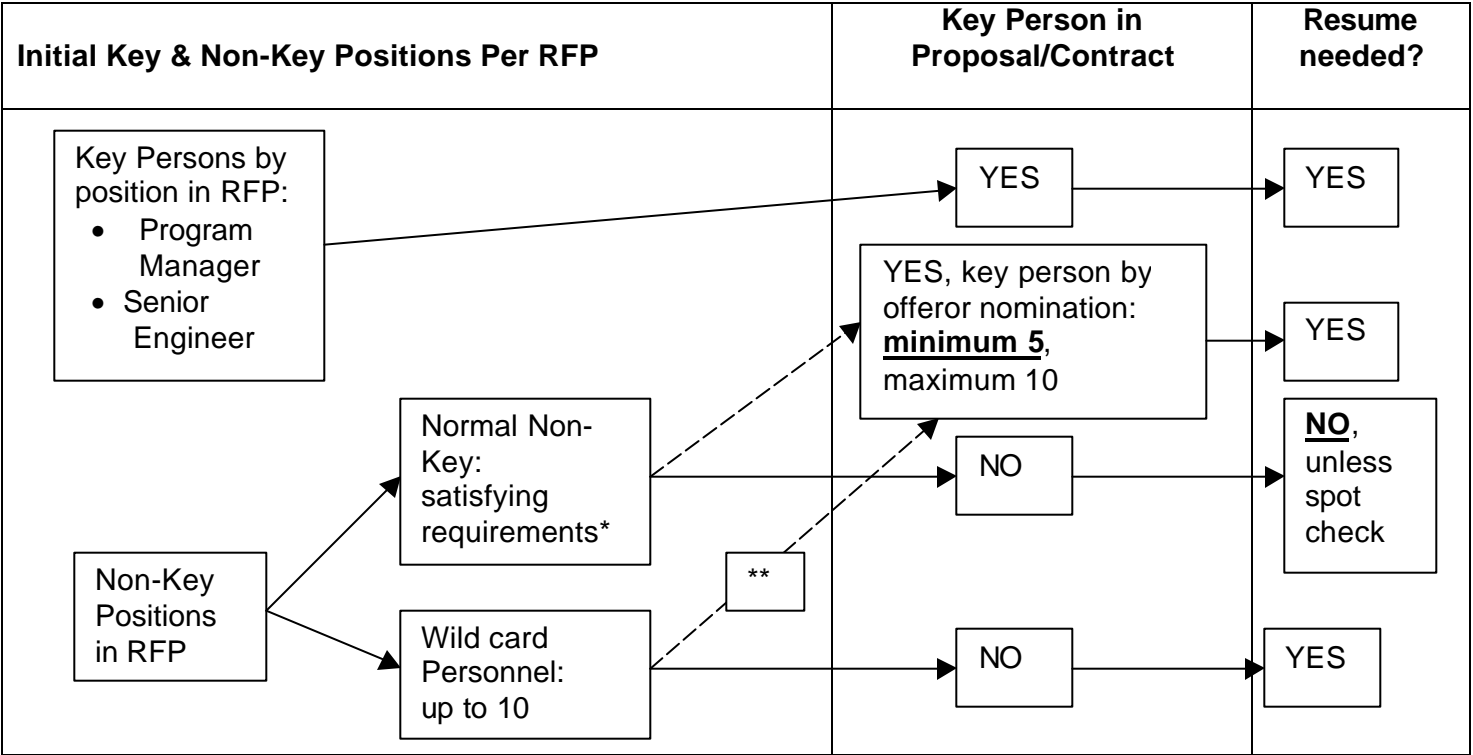
The offeror shall demonstrate capability to

- (a) perform parts engineering for space and avionics systems;
- (b) perform necessary quality assurance functions required in a space environment;
- (c) perform destructive physical analysis on parts;
- (d) package electronics in a form factor which will meet the environmental extremes found in space and tactical environments; and
- (e) fabricate electronic assemblies, incorporating surface mount and ball grid arrays for space and tactical environments.

Emphasize efforts which had to meet the strict environmental constraints found in space and tactical environments.

2. PERSONNEL QUALIFICATIONS:

- This factor covers the experience and qualifications of proposed key and non-key personnel. Qualified, experienced personnel will be an important factor for successful performance of the contract. Therefore, the offeror shall provide convincing proof it has - or has the ability to obtain - personnel with relevant knowledge and experience for the efforts addressed in the Statement of Work. (Availability of personnel can be based on current staff expected to be on board at time of award, letters of commitment, employment contracts, or any other means that provides evidence of availability.) The evidence should make clear whether the proposal will satisfy or exceed the requirements and the desired/strongly desired qualifications of the attachments covering the personnel qualifications and the format for proposing non-key personnel qualifications in the context of the Statement of Work and DD Form 254.
- **Minimum And Maximum Nomination Of Additional Key Personnel By The Offeror**
The offeror shall nominate a minimum of five key personnel and a maximum of ten key personnel in addition to the positions designated as key in the Key Personnel clause of the RFP.
- The RFP establishes certain minimum qualifications, such as US citizenship and eligibility for SECRET clearance for key personnel. A proposal would be deficient and unacceptable (though possibly correctable) for failure to satisfy minimum qualification requirements. In other areas the RFP states "strong desires," "desires," and "preferences." For example, the RFP states a "strong desire" that key personnel possess all the educational and experience qualifications expressed for their positions; it also states a "strong desire" that the average experience of the group of non-key personnel for each position satisfy each of the experience requirements expressed in years. While shortfalls in these areas will impact evaluation, they are not deficiencies. The RFP also allows proposal of a maximum of ten "wild card" personnel that are not proposed for key positions that are identified by the RFP and who do not have "required" degrees or security credentials/eligibility, provided their resumes and proposed roles support their suitability. A proposal with up to ten such personnel would be acceptable in this regard, but evaluation standing could be affected.
- **Resume requirements and qualifications** are discussed in the following paragraphs, and resume requirements are also graphically displayed below. **In essence, resumes shall be available but not submitted with the proposal for non-key personnel who satisfy all requirements of their position; for the few other personnel, both key and non-key "wild card," resumes must be submitted with the proposal.** Security clearance/eligibility data, educational data such as dates of degrees, or other required data not included in existing resumes may be provided in a separate table(s.), which may display only that data missing from specific resumes. The purpose of this arrangement is to avoid the need to edit a mass of resumes that already exist.



*The experience requirement for non-key personnel is a desired average for the group. If the group satisfies the average, each member satisfies the experience requirement even if below the average.

**Wild card personnel nominated as key persons must be US citizens and eligible for security clearance.

- Resumes must be provided for all **key personnel**. In addition to career experience and education, each resume should describe specific experience supporting the statement of work and personnel qualifications addressed in the attachment by that title, unless obvious from career experience. Ensure resume data for degrees includes the year the degree was granted and the field, and provide lower degree data even if a higher degree is required. State the expected work location. Eligibility for SECRET clearance may be based on evidence such as possession of a current SECRET or higher clearance, the absence of knowledge that would indicate a person would not be eligible, and no prior refusal of a SECRET or higher clearance, unless there is a satisfactory explanation suggesting there is no current problem. Clearance status may be indicated in the resume, by a statement in the proposal, or in a summary table.
- Resumes shall be available but shall not be provided in the proposal for **non-key personnel**, with the exceptions stated below. Instead, offerors shall provide the names of non-key personnel, grouping them by position, in Attachment (4) or similar table. The offeror shall state the years of experience for each person, the average experience for the group, and a “yes” or “no” mark whether the person is both a US citizen and eligible for secret clearance. Also comply with the other instructions in Attachment (4). Content of resumes for non-key or “wild card” personnel should be the same as for key personnel.

- While it is preferable that non-key personnel be U.S. citizens and eligible for SECRET clearance, the offeror may propose other personnel under the “wild card” procedure provided each person is supported by a resume and an explanation of the role of the person in the project, with security concerns addressed where foreseeable. (“Eligibility” is defined the same as above for key personnel.) Acceptability of such personnel is subject to the discretion of the Government. (Note that personnel lacking citizenship and eligibility are not acceptable as nominees to be key personnel.)
- (Note that the experience requirements are for individual key personnel but are averages for non-key personnel; therefore, it is not necessary that an individual non-key person have a certain level of experience, and a resume is not required solely because the individual falls below the average.) Required qualifications for non-key personnel (including subcontract and consultant personnel) may be evaluated by spot-checking resumes requested by the Government after receipt of proposals. As mentioned in the description of the “wild card” procedure above, up to ten personnel that are not designated by the RFP as key personnel, in any positions at the contractor’s discretion, need not satisfy the educational requirement, and their experience and other qualifications will be evaluated and rated appropriately. (As stated, they also need not satisfy the security requirements within the limitations stated.) Regarding non-key personnel, the offeror shall submit resumes only for these wild card non-key personnel (who do not meet stated requirements) at the time of proposal submission and for personnel identified for spot-checking by the Government upon request. Offerors shall submit such requested resumes within one week of receipt of the request. Submission by compatible e-mail or by facsimile transmission ((202) 767-6197) is acceptable.

3. *MANAGEMENT APPROACH, COMPANY EXPERIENCE AND FACILITIES:*

The evidence should make clear whether the proposal will satisfy or exceed the requirements of the RFP related to the management approach, company experience, and facilities and equipment in the context of the Statement of Work, personnel related attachments, and the DD Form 254.

Note, as also mentioned above, offerors are not required to address their approaches to all functions and tasks, their experience, or their supporting facilities for all tasks; the focus is on significant functions, tasks, experience and facilities. However, it is desired that significant unusual efficiencies or benefits to the program in routine, lower-level areas be addressed.

The offeror shall state its degree of **corporate commitment** to accomplish the program, and the offeror shall provide a brief description of its **management philosophy**, including any points that make it especially effective.

The offeror shall provide a brief narrative description and organization chart of the proposed **supporting organization**, which shall include:

- (a) a description of the structure for reporting to the program manager, including subcontractors;
- (b) a description of the program manager's authority to direct corporate resources toward accomplishment of tasks;
- (c) identification of the official to whom the program manager reports, as well as the level of that official;
- (d) a description of how this program will fit into the organization structure of the offeror's profit center;
- (e) a description of the relationship between the profit center and the total corporation, including identification of the corporate official to whom the profit center manager reports, as well as the level of that official;
- (f) an explanation of the functional relationships among internal engineering development entities and production/manufacturing entities as well as associated elements necessary to accomplish the program; and
- (g) if the proposal is submitted from a team of companies or a prime with major subcontractors that provide required labor, the offeror shall explain the inter-company relationships as well as reporting relationships in each company involved.

The offeror shall, regarding **workforce management**:

- (a) describe the plan to retain key personnel throughout the term of any resulting contract;
- (b) demonstrate ability to attract additional trained personnel; and
- (b) describe the strategy for and ability to ramp-up and respond to surges and decreases in effort.

The offeror shall describe its key **management systems and internal procedures** that will foster program success.

The offeror shall describe the extent and quality of its own and major subcontractor's **corporate experience** over the past five years relevant to the SOW tasks. The description should relate to the table summarizing experience over the past five years under "experience based technical understanding," above, and experience already described to demonstrate technical understanding should be simply referred to, with information added if needed to illustrate the corporate aspect of that experience. Corporate experience should be linked to this procurement by describing how it will be transfused into the project through the personnel and organizations performing under the contract. Examples of the latter might include the following: evidence of continuity of key management personnel and performing units; in-house consultants; web based resources to develop, record, and transfuse lessons learned and communicate expertise; and use of computer aided design, manufacturing and

testing resources as viewed from a corporate knowledge perspective (described below from a facilities perspective).

The offeror shall describe the **facilities and equipment** proposed to satisfy the requirements indicated in the Statement of Work to (a) perform parts engineering for space and avionics systems; (b) perform necessary quality assurance functions required in a space environment; (c) perform destructive physical analysis on parts; (d) package electronics in a form factor which will meet the environmental extremes found in space and tactical environments; and (e) fabricate electronic assemblies incorporating surface mount and ball grid arrays for space and tactical environments, and (f) any other significant facilities or equipment proposed for use. Emphasis should be given to efforts which had to meet the strict environmental constraints found in space and tactical environments. The offeror shall state whether the proposed facilities and equipment are corporately owned, leased, or the property of a team member. The offeror shall also describe its strategy for acquisition of new resources as necessary to satisfy program requirements.

L-15 VOLUME II - BUSINESS PROPOSAL

REQUIRED COPIES: 1 ORIGINAL AND 2 COPIES Note that only the original and 1 copy of the SF33 and required fill-in contractual information need be supplied.

(1) COST PROPOSAL

(a) The offeror shall submit a business proposal that includes a cost proposal with supporting information for each cost element consistent with offeror's cost accounting system. The supporting breakdown should include such elements as materials, subcontracts, direct labor, indirect cost, and other costs such as travel and consultants. The offeror shall provide exhibits as necessary to substantiate each cost element that is not stipulated in the RFP. (Stipulated elements include travel cost, the level of effort (other than for undesignated support labor), and material cost other than for subcontractors and consultants providing required labor.) The following paragraphs are intended to require data to facilitate an efficient Government review without placing an undue burden on offerors. The intent is to collect data sufficient to produce independent Government spreadsheets while minimizing the need to clarify cost data. Confusion and delay are often caused by uncertainty over the alignment of subcontractor costs with prime offeror rate periods, or the breakout of a subcontract proposal by cost element..

(b) Base proposal costs on an anticipated start date of January 28, 2001. Award is anticipated in late January 2001.

(c) Provide detailed cost tables both for each CLIN and for the total program. The tables for the total program must show **detail by the offeror's fiscal year**, which will facilitate analysis by NRL. Should hours in a category be broken down to show SOW detail, ensure the tables for the total program (or supplementary tables) show the total hours and costs for each labor category. (Such a breakdown by SOW is not desired for the fiscal year data.)

(d) Provide a summary table showing the full value (e.g., CPFF or FFP at the subcontractor/consultant level) of each **subcontractor's and consultant's costs**, as well as its total hours, aligned with the offeror's fiscal years for the total program. State whether the breakout by cost elements has been included with the prime offeror's proposal. Include the dollar amounts for unnamed subcontractors in compliance with Provision L-10, "Material, Supplies and Equipment Estimate." (Such a table is not needed for each CLIN.) In the description of each subcontractor's proposal, state whether the subcontractor will provide its own office facilities for performance or will regularly use another organization's office facilities (state portion). For each subcontractor providing its own facilities, state whether special facilities are involved beyond normal office facilities with normal computer and software support.

(e) If a period of performance (e.g., the first year, second year, etc.) **overlaps** the point where a rate changes (including labor, burdens, any cost of money), the offeror shall submit a description of the timing of the change, the amount of the base for each rate period, and the rate applied to each base. Alternately, the formulas or methodology for calculating the base for each period may be stated (e.g., two thirds of the hours in the first period, one third in the second). This may be submitted as a summary table, separate from the cost tables for the total program by fiscal year, or submission may not be necessary if clear from the cost tables for the total program. If subcontractors do not submit such information (for their own rate periods) to the offeror, they should be prepared to submit it to NRL's Contracting Division.

(f) Provide a **rates table** showing all burden rates for each fiscal rate period. Include labor categories too, or, alternately for labor, indicate the percentage and timing of adjustments in category rates. If your company proposes using individual rates, and rates for some positions are based on composites of individuals, clarify the contribution of each person to the composite rate. Describe the base for each burden and cost of money factor, if used. Provide a table supporting the breakout by CLINS that shows the calculation of composite burden rates weighted by the proportion of the base in each fiscal period. Identify your fiscal year. Provide the same information for each subcontractor willing to provide it directly to you (for subcontractors providing labor for required personnel positions). If subcontractors do not submit such information to the offeror, they should be prepared to submit it to NRL's Contracting Division.

(g) Should rates be used in the proposal which are **not DCAA approved**, the offeror shall provide complete documentation and the rationale for their use at time of proposal submission. However, offerors are advised to use actual labor rates of proposed personnel as the basis for estimating key personnel costs when practicable.

(h) State the **policy for the timing of adjustments in labor rates**, and state the adjustments and timing used in the proposal. If category rates are proposed, state whether costs are accumulated and billed using category rates, individual employee rates, or both. If both, describe your accounting practice. Provide contingency employment documents for potential new hires and describe the timing of potential adjustments in their salaries if not the same as for current employees. Provide the same information for each subcontractor willing to provide it directly to you (for subcontractors providing labor for required personnel positions). If subcontractors do not submit such information to the offeror, they should be prepared to submit it to NRL's Contracting Division.

(i) If fringe benefit or overhead rates, G&A rates, or cost of money rates for the first period of performance are **changing significantly** (about 5% of the rate or more) from previously experienced or approved rates, an explanation should be provided. Provide the same information for each subcontractor willing to provide it directly to you (for subcontractors providing labor for required personnel positions). If subcontractors do not submit such information to the offeror, they should be prepared to submit it to NRL's Contracting Division.

(j) When you elect to claim **facilities capital cost of money** as an allowable cost, you must submit Form CASB-CMF and show the calculation of the proposed amount (see FAR 31.205-10). Provide the same information for each subcontractor willing to provide it directly to you (for subcontractors providing labor for required personnel positions). If subcontractors do not submit such information to the offeror, they should be prepared to submit it to NRL's Contracting Division.

(k) While there may be occasional support at NRL sites and occasional activities at Government installations, overhead should not be based on performance at NRL. The locations of work are anticipated as the contractor's sites, not NRL, and must be so proposed.

(l) Indicate the cognizant **DCAA office**, including the name and phone number of the point of contact. Include the same information for subcontractors over \$500,000.

(m) Provide a **summary of labor hours by position**, showing the makeup of each position by offeror hours, each subcontractor's hours and each consultant's hours.

(2) SMALL DISADVANTAGED BUSINESS PARTICIPATION PROPOSAL (In accordance with FAR 19.12)

All proposals must include information to permit evaluation of the extent of participation of certified small disadvantaged businesses in performance of the contract. See the provision at FAR 52.219-24, Small Disadvantaged Business Participation Program--Targets (Jan 1999), and the clause at 52.219-25, Small Disadvantaged Business Participation Program--Disadvantaged Status and Reporting (Jan 1999). (This is In addition to compliance by large business offerors with the clause at FAR 52.219-9, Small Business Subcontracting Plan (Jan 1999) with its Alternate II.) See the SBA Home Page FAQ for Small Disadvantaged Business regarding the requirement for certification (<http://www.sba.gov/sdb/section06d.htm> .) Extent of participation includes both monetary value (see FAR 52.219-24, paragraph (b)) and complexity of work. Participation may be in the form of joint ventures, teaming arrangements, or subcontracts (including consultant agreements). Offerors should support the credibility of such participation using evidence such as:

- the monetary value of the participation;
- for large business offerors, the offeror's record of past compliance with significant subcontracting plan goals and targets for SDBs specifically or with other stated goals. Also, include the most recent SF294 for at least the most similar current contract, if there is a similar current contract, and up to two other SF294s for similar work, if possible. Include the most recent SF295. (ACO and other Government sources may also be considered regarding credibility issues.);
- for small business offerors, any data that would support credibility, including a track record or list of SDB subcontracting accomplishments;
- for all offerors, the credibility of the relationships with proposed SDBs (e.g., through the degree of enforceability, such as a documented, enforceable commitment as contrasted with a simple plan; e.g., through identification of specific, certified SDBs, their planned work, and monetary value);
- the realism of the cost and technical proposals.
- a description of the complexity of the role visualized for each SDB with specific reference to the Statement of Work or Personnel Qualifications if applicable (e.g., indirect work by services employees; travel agency, printing or other such non-technical support services; subcontracting involving stated parts of the Statement of Work; participation as named staff assigned to stated required positions; or participation as key personnel for stated positions). SDBs proposed as suppliers of material items should be identified as manufacturers or non-manufacturers or kit assemblers, as defined in 13CFR121.406; see <http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?TITL=13&PART=121&SECTION=406&YEAR=2000&TYPE=TEXT>

SDB Participation should be addressed as a specific section of the Business Proposal (as well as, for large business offerors, parallel description in the subcontracting plan).

SDB criteria, other than for a prime contractor, are stated at the following web site for 13 CFR 124.1002:<http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?TITLE=13&PART=124&SECTION=1002&YEAR=2000&TYPE=TEXT>. The offeror must confirm that SDBs can claim certified status or in-process status.. (A helpful web address regarding eligibility is <http://www.sba.gov/sdb/section06f02.htm> .)

Any targets will be incorporated into and become part of any resulting contract.

(3) TERMS AND CONDITIONS

The offeror shall provide a completed SF33 (with amendments indicated or attached), Section B and all other pages with entries to be provided by the offeror, Section K, and any exceptions to RFP provisions. It is not necessary to include RFP pages that do not require offeror entries.

(4) GOVERNMENT SUBCONTRACTING GOALS

For large business offerors, the following are the Government goals relevant to subcontracting plans for prime contractors:

- 5% of the total value of all subcontract awards for each fiscal year for small business concerns owned and controlled by socially and economically disadvantaged individuals;
- 5% of the total value of subcontract awards for small business concerns owned and controlled by women;
- 1.5% of the total value of subcontract awards for firms located in qualified HUBZones;
- 3% for veteran owned small business concerns (addressed in the Federal Register of October 11, 2000)

Attainment of these goals may not be feasible for particular offerors for particular RFPs. If targets below the goals are proposed in the subcontracting plan, the offeror is encouraged to explain the circumstances making the goals infeasible and to describe the procedures used to maximize opportunities for the entities subject to goals under this procurement.

L-16 BACKGROUND OF PROGRAM

The contractor performing the preceding contract, N00173-99-D-6008, is Assurance Technology Corporation.

L-17 OTHER BACKGROUND INFORMATION

Key personnel must be available when work is required through technical direction. In accordance with the Key Personnel Clause, substitutions of key personnel cannot be made during the first 90 days after contract award. It is not anticipated that key personnel will need to be located at NRL.

The modified level of effort clause, H-3, is not the clause customarily used in Naval Research Laboratory level of effort contracts. The modified clause contains several revisions designed to increase the fairness of fee final fee determination and to increase the efficiency of administration. The key change is in paragraph (h). The intent of that change is to smoothly accommodate fee adjustment in the case fewer

hours are delivered than are required in the clause. The customary clause has a grace band with no adjustment if at least 95% of required hours are delivered, but the adjustment kicks in abruptly as there is a strict pro-rata reduction of fee if less than 95 % of hours are delivered. The modified clause graduates the reduction between 95% and 90%. A contractor whose delivery of hours would trigger a reduction will retain more fee under the modified clause.

The Government will not make more than one award.

The evaluation of past performance will be accomplished as a part of the evaluations of other factors.

SECTION M
EVALUATION FACTORS FOR AWARD

M-1 EVALUATION

Award will be made to that offeror whose proposal is determined to be the best value to the Government, proposed cost and other factors considered. The Government reserves the right to make award to other than the low offeror. Although the total score, which is based on the technical/management and SDB Participation factors, is a more important selection consideration than the cost factor, the closer the scores of the various proposals are to one another, the more important the cost factor becomes.

M-2 EVALUATION FACTORS FOR AWARD

Proposals will be evaluated in accordance with the following factors. "Experience Based Technical Understanding" is the most important and is moderately more important than "Personnel Qualifications" and "Management Approach, Corporate Experience and Facilities," which are of equal importance. "Small Disadvantaged Business Participation" will be weighted 5%. The resulting score will be considered in the context of the realistic cost to the Government to determine the best value to the Government. There are no pre-established weights at the sub-factor level (e.g., Systems Engineering, Systems Design and Development, etc.).

M-2-1. TECHNICAL/MANAGEMENT

(1) EXPERIENCE BASED TECHNICAL UNDERSTANDING

Assessment of this sub-factor will be based on the offeror's effective understanding of the technical basis and requirements of the Statement of Work. It will include consideration of Systems Engineering, Systems Design & Development, Systems Effectiveness, and Fabrication Activities.

(2) PERSONNEL QUALIFICATIONS

The proposed personnel will be evaluated on the experience, qualifications, and availability of the proposed key and non-key personnel relevant to the proposed task, including the degree to which they meet or exceed the requirements set forth in the Personnel Qualifications attachment and DD Form 254.

(3) MANAGEMENT APPROACH, CORPORATE EXPERIENCE AND FACILITIES

This factor will be assessed based on:

- The soundness and potential of the offeror's project management approach to accomplish the task, including corporate commitment and management philosophy, supporting organization, workforce management approach, and management systems and internal procedures.
- The quantity and quality of the offeror's corporate experience relevant to the proposed task.
- The adequacy of facilities relevant to the proposed effort.

M-2-2 SMALL DISADVANTAGED BUSINESS PARTICIPATION

The proposed extent of participation of small disadvantaged business concerns in performance of the contract will be evaluated on the basis of the realistic and credible extent of participation of such firms in terms of the value of the total acquisition and the complexity of the work such firms are to perform.

M-2-3 COST TO THE GOVERNMENT

Proposed estimated cost to the Government. The Government may adjust the proposed cost for purposes of evaluation based upon an evaluation of cost realism. Cost Realism means that the costs in an offeror's proposal are realistic for the work to be performed; reflect a clear understanding of the requirements; and are consistent with the various elements of the offeror's technical proposal. The cost realism evaluation includes an analysis of the adequacy of the hours, labor mix, and other direct costs to perform the work as proposed in the technical proposal as well as the proposed labor and indirect rates. It also includes evaluation of the likelihood that the risks inherent in the offeror's technical and management approach will result in higher actual costs than anticipated.

M-3 FAR 52.217-5 - EVALUATION OF OPTIONS (JUL 1990)

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

STATEMENT OF WORK

C.1 BACKGROUND

C.1.1 Introduction

The Naval Center for Space Technology (NCST) located at the U.S. Naval Research Laboratory (NRL) in Washington, DC, is the designated lead laboratory for Navy space programs. NCST has the mission to preserve and enhance a strong space technology base and provide expert capabilities in the development and acquisition of space systems which support Naval Missions.

The Space Systems Development Department (SSDD), a department within NCST, has the primary responsibility (a) to develop space and aerospace systems, and (b) to actively pursue emerging technologies to advance space and aerospace system development. The SSDD (a) defines system requirements based on overall mission objectives; (b) develops alternative system architectures; (c) designs and develops systems and subsystems; and (d) implements technologies to achieve optimized, operational systems.

C.1.2 Objective

The objective of the Request for Proposals (RFP) and Statement of Work (SOW) is (a) to acquire the necessary personnel, equipment and facilities to accomplish the tasks described herein; and (b) to define the technical and managerial tasks required to accomplish developments for present and future SSDD space and aerospace programs. SSDD is presently pursuing several programs, each at various stages of development. In addition SSDD, is currently involved in the conceptual or design phases of various other advanced concepts studies and projects which will be included in future generations of space and aerospace systems.

C.1.3 Scope of Work

This SOW defines tasks to be performed by the successful Contractor. The scope of this statement of work will include tasks in the areas of (a) space/aerospace systems program management, (b) program documentation, (c) systems engineering, (d) systems design and development, (e) systems effectiveness, (f) fabrication, (g) logistics, and (h) other associated efforts which may be required to successfully accomplish both current and future SSDD programs.

The successful contractor shall direct, perform and report on all tasks and activities incorporated into this SOW. Unless otherwise specified herein, the successful contractor shall provide all personnel,

resources and materials necessary to accomplish the efforts described herein.

C.2 APPLICABLE DOCUMENTS

The Contractor shall comply with the following specifications, standards, and publications as they apply to each task. . The exact references listed form an unseverable part of this specification. In the event a date is not included for any given specification, standard or publication, the latest reference to the document from the Department of Defense Index of Specifications and Standards (DODISS) shall apply. Nothing in this document, however, supercedes applicable laws or regulations unless a specific exemption has been obtained. Copies of federal and military specifications, and standards are available from:

the Defense Standardization Program at
<http://www.dsp.dla.mil/online-docs.htm>

or

Department of Defense Single Stock Point (DODSSP)
Standards Document Order Desk
700 Robins Avenue, Building 4D
Philadelphia, PA 19111-5094

Copies of NRL documentation are available from:
See Section L.

C.2.1 NRL Technical Specifications and Documents

<u>Document Number</u>	<u>Description</u>
SSD-D-002	Naval Center for Space Technology (NCST) Parts Program Requirements and Guidelines
SSD-D-005J	Configuration Management Plan
SSD-D-009C	Destructive Physical Analysis Procedure
SSD-D-010	Engineering Design Handbook for Spacecraft Electronic and Electromechanical Parts
SSD-D-059	NRL/SSDD Monthly Status Report Procedure
SSD-D-072B	Naval Center for Space Technology Document Style Guide
SSD-D-AS139	Qualified Parts List
SSD-D-AS210B	Worst Case Analysis Guidelines and Criteria
SSD-D-AS214	Parts Program Requirements and Guidelines
SSD-D-AS303	Quality Assurance Program Requirements and Guidelines
SSD-D-AS322	Test Methods and Controls
STC-D-001	Spacecraft Product Assurance Program Plan
5100.13C	NRL Occupational Safety and Health Manual
5510.40D	NRL Security Manual

C.2.2 Military/Department of Defense Specifications, Standards and Handbooks

<u>Document Number</u>	<u>Description</u>
DOD-E-8983C	Electronic Equipment, Aerospace, Extended Space Environment, General Specification for
MIL-STD-188-110	Interoperability Standards for Data Modems
MIL-STD-188-114	Electrical Characteristics of Digital Interface Circuits
MIL-STD-188-181B	Single Access 5-KHz and 25-KHz UHF Satellite Communications Channels (DoD Users Only)
MIL-STD-188-182A(3)	Interoperability Standard for 5-KHz UHF DAMA Terminal Waveform (DoD Users Only)
MIL-STD-188-183A(2)	Interoperability Standard for 25-KHz UHF TDMA/DAMA Terminal Waveform
MIL-STD-188-185(2)	Interoperability UHF MILSATCOM DAMA Control System (DoD Users Only)
MIL-STD-188-200	System Design and Engineering Standards for Tactical Communications
MIL-STD-461E	Requirements for The Control of Electromagnetic Interference Characteristics of Subsystems and Equipment
MIL-HDBK 881	Work Breakdown Structure
MIL-STD-1540D	Product Verification Requirements for Launch, Upper Stage, and Space Vehicles
MIL-HDBK-217F(2)	Reliability Prediction of Electronic Equipment
MIL-HDBK-454(1)	General Guidelines for Electronic Equipment

MIL-HDBK-343 NOT 1	Design, Construction, and Testing Requirements for One of A Kind Space Equipment
DOD-HDBK-263b	Electrostatic Discharge Control Handbook for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices) (Metric)
MIL-T-31000	General Specification for Technical Data Packages
JTA	Joint Technical Architecture

C.2.3 Other Government Technical Specifications and Documents

The following documents form a part of this specification to the extent specified herein.

C2.3.1	North Atlantic Treaty organization (NATO) Standardization Agreements (STANAG)
STANAG 4231	(RESTRICTED) Digital Interoperability between UHF Satellite Communication Terminals
STANAG 4246	(SECRET) Have Quick UHF Secure and Jam Resistant Communications Equipment
STANAG 4372	(SECRET) SATURN – A Fast Frequency Hopping ECCM Mode for UHF Radio

(Copies may be obtained through the appropriate NATO sub registry or using data at <http://www.nssn.org>.)

C2.3.2	Defense Information Systems Agency (DISA)
JCT3A 9001C	Joint Terminal Interface Specification for VHF SINCGARS Waveform
JIEO 9120A	UHF HAVEQUICK/SATURN Waveform Technical Interface Specification

(Copies may be obtained from the Joint Interoperability Engineering Office (JIEO), 11440 Issac Newton Square North, Reston, VA 22090-5000)

C.2.4 Non-Government Publications

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents, which are DOD adopted, are those listed in the issue of the DoDISS cited in the solicitation.

C.2.4.1 American National Standard Institute (ANSI)

<u>Document Number</u>	<u>Description</u>
ANSI Y32.16	Reference Designations for Electrical and Electronic Parts And Equipments
ANSI Y14.5M	Dimensioning and Tolerancing
ANSI Y32.2	Graphic Symbols for Electrical and Electronic Diagrams
ANSI/IEEE 830-1994	Software Requirements Specification, Guide to
ANSI/IEEE1042-1987	Guide to Software Configuration Management

(Applications for copies should be addressed to the American Nation Standard Institute, 1430 Broadway, New York, NY 10018. Online IEEE standards may be obtained at <http://standards.ieee.org/catalog/olis/index.html>.)

C.2.4.2 Electronic Industries Association (EIA)

<u>Document Number</u>	<u>Description</u>
RS-232	Interface Between Terminal Equipment and Data Circuit Terminating Equipment Employing Serial Binary Data Interchange
RS-422	Electrical Characteristics of Balanced Voltage Digital Interface Circuits

RS-423	Electrical Characteristics of Unbalanced Voltage Digital Interface Circuits
EIA/IS-649	Configuration Management
EIA/IS-632	Systems Engineering

(Application for copies should be addressed to Electronic Industries Association, 2001 Pennsylvania Ave., NW, Washington, DC 20006)

C.2.4.3 Institute of Electrical and Electronic Engineers (IEEE)

<u>Document Number</u>	<u>Description</u>
IEEE 828-1990	Software Configuration Management Plans
IEEE 802.3	Information Processing Systems - Local Area Networks - Part 3: Carrier Sense Multiple Access with Collision Detection
IEEE 1014	Standard for a Versatile Backplane Bus: VME-bus
IEEE 1101.4	Standard for Military Module, Format E Form Factor
IEEE 1394	High Performance Serial Bus

(Applications for copies should be addressed to the Institute of Electrical and Electronic Engineers Inc., 345 East 47th Street, New York, NY 10017. Online IEEE standards may be obtained at <http://standards.ieee.org/catalog/olis/index.html>.)

C.3 SPECIFIC REQUIREMENTS

This section contains the detailed requirements for this effort. The Contractor shall accomplish these requirements using the guidelines and directions referenced in Section C.TBD entitled Applicable Documents, unless use of these guidelines is modified by the Contracting Officer's Representative (COR) pursuant to Contract Sections G-TBD and G-TBD entitled Technical Direction and Technical Direction Memorandum respectively. The Contractor shall not incorporate proprietary hardware or software in any deliverable developed under this contract without prior written approval of the COR.

C.3.1 TASK 1 - PROGRAM MANAGEMENT

The contractor shall provide the personnel, equipment and facilities necessary to perform the program management, control, and reporting functions necessary to manage, direct and accomplish the efforts required under this SOW. The work required under this task shall include, but may not be limited to: (a) contract phase-in efforts, (b) program control and status reporting, and (c) security/safety monitoring and reporting.

C.3.1.1 Subtask 1.1 - Contract Phase In

The successful Contractor shall integrate its organization into the ongoing system development effort being performed by the incumbent Contractor within sixty (60) days after the effective date of the contract, or the date of contract award, whichever is later. During this phase-in period, the Contractor shall (a) establish and implement a trained and experienced work force capable of continuing the on-going work, (b) acquire facilities and equipment adequate to continuing the on-going work; and (c) develop and establish operational and program management procedures sufficient to organize, perform, manage and control the tasks required under this statement of work. Further, the successful contractor's workforce shall, within the phase-in period, become familiar with and assume responsibility for the ongoing effort being performed by the current contractor.

The successful contractor's program manager shall be responsible for scheduling, coordinating, and executing all transition activities. All communications between the successful contractor and the incumbent contractor regarding transition shall be conducted via the COR or the Contracting Officer.

C.3.1.2 Subtask 1.2 - Program Control and Status Reporting

The Contractor shall establish and maintain a management system to control and report on contract efforts. The management system shall use a Contract Work Breakdown Structure (CWBS), as described in MIL-STD-881, which shall, as a minimum perform the following functions: (a) assess technical achievement, (b) measure progress, and (c) determine and accrue costs accurately for each assigned task. The required management system shall compare actual to planned performance and costs, and shall illustrate program status. A direct correlation shall exist between the CWBS employed by the SSDD for its reporting purposes and the CWBS developed by the contractor. The Contractor shall report program technical issues, cost and schedule status at the task level, and these items shall be summarized at the overall program level within each report. Reports required under this subtask shall be in accordance with DD Form 1423 - Contract Data Requirements List (CDRL), CDRL A001, Contract Work Breakdown Structure.

- (a) Contract Summary - The Contractor shall provide the COR with information and reports on

(a) deliveries, (b) meetings, (c) scheduled versus actual work performed, and (d) actual and projected slippage along with actual and projected impact on overall contract performance. Resultant Milestone Chart(s) shall be submitted in accordance with DD Form 1423, CDRL A020, Milestone Chart.

(b) Contract Task Status/Items - The Contractor shall provide status on the progress of each contract task or item, which shall include, but may not be limited to, status of design, development, fabrication, production, assembly, testing, quality control efforts needed to fulfill contract requirements. The contractor shall also monitor and report status on other items, which may include, but may not be limited to: materials, Government Furnished Equipment (GFE), data items, subcontracting efforts, and unresolved problems, in accordance with DD Form 1423, CDRL A021, Monthly Status Report, and A022, Government Furnished Equipment, respectively.

(c) Financial Reports - The contractor shall provide cost reports on contract expenditures which will allow an objective determination of earned value accruing to the Government for each ongoing task. Cost data shall be presented in accordance with Department of Defense (DOD) Data Item Description (DID), DI-F-6010A, Cost/Schedule Status Report (C/SSR), tailored to the SSDD requirements to include planned versus actual cost data, and planned versus actual manpower usage. The cost data included in this requirement shall be correlated to the CWBS elements referenced in paragraph C.3.1.2 above. The contractor shall provide a narrative explanation of all variances greater than 10%. Resultant reports shall be submitted in accordance with DD Form 1423, CDRL A001, Financial Reports.

C.3.1.3 Subtask 1.3 - Security and Safety Compliance

The Contractor shall comply with all NRL safety and security requirements, and shall implement measures to accomplish these requirements. Specifically, the contractor shall comply with both the NRL Occupational Safety and Health Manual, 5100.13C, and the NRL Security Manual, 5510.40D with respect to all contractor employees located at NRL.

C.3.2 TASK 2 - PROGRAM DOCUMENTATION

The contractor shall provide the personnel, equipment and facilities necessary to perform the program documentation efforts required under this SOW. The work required under this task shall include, but may not be limited to: (a) generating and preparing program plans and briefings, (b) performing configuration management functions, (c) performing data management functions, (d) generating technical documentation, and (e) documentation review and evaluation.

C.3.2.1 Subtask 2.1 - Program Plans and Briefings

The Contractor shall generate program plans and briefings on assigned programs.

(a) Program Planing Documents - The contractor shall generate and provide updates to SSDD planning documents which may include, but may not be limited to, program implementation plans, system development, and test plans for existing and new space/aerospace programs, in accordance with DD Form 1423, CDRL A004, Program Documentation.

(b) Program Briefings - The contractor shall prepare program status and technical briefings for the SSDD in accordance with DD Form 1423, CDRL A005, Program Briefings. The required briefings shall be prepared on 8"x10" transparencies.

(c) Document Finalization and Illustration - The contractor shall finalize documents for selected SSDD space/aerospace development programs in accordance with DD Form 1423, CDRL A004, Program Documentation. Work to be performed under this requirement shall include, but may not be limited to, typing, word processing, electronic document transmission, drafting, illustrating (including development of printed circuit board (PCB) layouts, preparation of view-graphs, document assembly, and document distribution.

C.3.2.2 Subtask 2.2 - Configuration Management

The Contractor shall maintain configuration control of both the classified and unclassified SSDD space/aerospace programs in accordance with EIA/IS-649, entitled Configuration Management. The work required under this subtask shall include, but may not be limited to: (a) establishing hardware and software configuration items, (b) performing configuration change management, (c) performing configuration status accounting, (d) performing configuration audits and verification, and (e) performing CM planning and management. Automated tools shall be used to perform these functions whenever practical.

C.3.2.3 Subtask 2.3 - Data Management

The Contractor shall ensure that deliverable data items are received per schedule, that the items are tracked as they are being reviewed and that the proper approvals are received for each deliverable. The contractor shall establish a tracking system to record the progression of the deliverables through the approval process and make recommendations on how to further automate the system and improve its efficiency.

The Contractor shall also organize, catalog, distribute, control and store documents, drawings and other materials. As part of this effort, the contractor shall provide status reports on drawings and conduct regular periodic inventories to ascertain item availability, legibility and reproducibility.

C.3.2.4 Subtask 2.4 - System Technical Documentation

The Contractor shall generate technical documentation for assigned tasks which shall included, but may not be limited to: (a) system development specifications, (b) interface control documents, (c) system schedules, (d) system test documentation, (e) subsystem/equipment type B2 specifications, (f) general subsystem development specification and contents, (g) subsystem software development specifications, and (h) other system technical documentation.

(a) System Development Specifications - The Contractor shall maintain and update the existing system development specifications for various SSDD space/aerospace development programs, in accordance with DD Form 1423, CDRL A006, Development Specifications. The required specifications define the system level performance requirements. The Contractor shall revise these specifications to reflect requirement changes as the systems evolve. All specification revisions shall be approved through the SSDD system design process.

(b) Interface Control Documents - The Contractor shall develop, update and maintain internal and external Interface Control Documents (ICD) which specify interface requirements for SSDD space/aerospace systems, in accordance with DD Form 1423, CDRL A007, Interface Control Documents. The required documents shall reflect the results of applicable design reviews. The Contractor shall also develop, update and maintain the Interface Wire Lists (IWL) for individual systems to enable integration and test planning and performance. The IWLs shall define the interconnections of subsystems/equipment with each other as well as with other systems. The IWLs shall be referenced to the ICDs to assure conformance with specification requirements.

(c) System Schedules - The Contractor shall generate, update and maintain program schedules for ongoing SSDD space/aerospace systems development programs in accordance with DD Form 1423, CDRL A008, Program Schedules. This task shall include the integration of all subsystem schedules into a master program schedule, and verification of schedule compatibility with the master development schedule. The program schedules shall consist of a master schedule, separate subsystem schedules, and a test and integration schedule for use by the SSDD. The schedules shall be prepared using both Gantt and PERT formats. New schedule baselines shall not be created without written permission from the COR. The Contractor shall revise and submit schedules on a quarterly basis. More frequent submissions may be implemented if the program progress or risk dictates. Each schedule submission shall include a narrative discussing changes from the previous schedule revision.

(d) System Test Documentation - The Contractor shall develop, update and maintain the system test documentation required to implement approved program test plan requirements, in accordance with DD Form 1423, CDRL A009, Test Plans.

(e) Subsystem/Equipment Type B2 Specifications - The Contractor shall update the existing subsystem Type B2 specifications and prepare new subsystem/equipment Type B2 specifications for spacecraft and aerospace equipment, in accordance with DD Form 1423, CDRL A010, Type B2 Specifications. During performance of the qualification phase design and development tasks of each development program, the Contractor may be required to prepare additional lower level equipment specifications to properly identify and control equipment configuration and performance. The Contractor shall prepare these additional specifications in accordance with written technical direction from the COR (See Contract Sections G.3 and G.4). The Contractor shall submit preliminary copies of each subsystem/equipment specification to SSDD for review and approval in accordance with the program schedule. The Contractor shall review the preliminary copies and submit final copies for COR approval. The Contractor shall update subsystem specifications after each system design review.

(f) General Subsystem Development Specification and Contents - The Contractor shall update and maintain the general specifications containing the common requirements to be used in each subsystem Type B2 specification. The Contractor shall use this document to assure that consistence or format and terminology is maintain throughout the specification generation and overall documentation effort, in accordance with DD Form 1423, CDRL A010, Type B2 Specifications.

(g) **Subsystem Software Development Specification** - The Contractor shall update and maintain the existing subsystem software development specifications and generate new software development specifications. Changes shall be incorporated through the specification change procedures defined in NRL Document SSD-D-AS142, and shall be submitted in accordance with DD Form 1423, CDRL A011, Software Development Specifications.

(h) **Other System Technical Documentation** - The Contractor shall prepare, update and maintain system technical documentation in accordance with the CDRL report indicated below, which shall include, but may not be limited to:

(i) Technical Reports - which shall include, but may not be limited to, system analysis reports, system requirements allocation reports, system test reports, and document lists (CDRL A012, Technical Reports).

(ii) Specification Trees - which shall include the preparation and maintenance of all specification trees related to the program documentation task (CDRL A013, System Design Packages).

(iii) Parts Lists - which shall include all system parts lists (CDRL A013, System Design Packages).

(iv) System Design Review Reports - which shall include, but may not be limited to, system design review results, action item assignments, action item resolutions and First Article Configuration Inspection (FACI) results (CDRL A013, System Design Packages).

(v) System Drawing Packages - which shall include, but may not be limited to, drawings, procedures, materials and process documents, system drawings, and lists that define a specific system design (CDRL A013, System Design Packages).

(vi) Parts Program Documents - which shall be in accordance with SSD-D-AS214, Parts Programs Requirements and Guidelines (CDRL A013, System Design Packages).

(vii) Quality Assurance Documents - which shall be in accordance with SSD-D-AS303, Quality Assurance Programs Requirements and Guidelines (CDRL A013, System Design Packages).

(viii) Production Documents - which shall be in accordance with SSDD Manufacturing Procedures (MP) (CDRL A013, System Design Packages).

(ix) Test Methods and Control Documents - which shall be in accordance with SSD-D-AS322 (CDRL A013, System Design Packages).

C.3.2.5 Subtask 2.5 - Documentation Review and Evaluation

(a) Program Design Reviews - The Contractor shall participate in all the design and requirements reviews and technical interchange meetings planned for each development program. The Contractor shall critique the design documentation for completeness and compatibility with SSDD-established documentation requirements, and shall present the results of these critiques to the COR.

(b) Documentation Evaluation - The Contractor shall review documentation generated by SSDD and other participating contractors, evaluate its compliance with the established SSDD criteria, and assess its impact on the content of the design specifications and other system and subsystem technical documentation. The Contractor shall inform SSDD in writing of its assessment of the impact and recommend changes to the program documentation. Documentation to be reviewed shall include, but may not be limited to: (a) technical reports, (b) schedules, (c) analysis reports, (d) design specifications, (e) briefings, (f) design review data packages, (g) drawing packages, (h) design review minutes and action item responses, (i) test plans and procedures, and (j) test reports.

C.3.3 TASK 3 - SYSTEMS ENGINEERING

In accordance with EIA/IS-632, Systems Engineering, the Contractor shall analyze SSDD space and aerospace systems, perform evaluations of systems interfaces, participate in system definition and development, and generate metrics and measures of effectiveness for each system.

C.3.3.1 Subtask 3.1 - Systems Integration and Test

The Contractor shall perform design and development engineering efforts which shall include, but may not be limited to: (a) development of technical evaluations to be documented in technical reports and memoranda, (b) participation in working groups, and (c) participation in test and evaluation efforts directed toward integration and the continued operation of SSDD systems, subsystems and assemblies.

Work to be accomplished under this requirement shall include, but may not be limited to, (a) unit circuit design rationale and constraints, (b) worst-case performance margins, (c) electrical stress margins, (d) magnetic design rationale and constraints, (e) software operational protocols and diagnostic capabilities, and (f) EMC/EMI design considerations.

In addition, the Contractor shall perform functions which shall include, but may not be limited to the development and performance of production tests and electrical performance and environmental test histories, procedures and constraints related to (a) packaging design rationale and constraints, (b) parts selection and application information, (c) materials and processes engineering considerations, and (d) fabrication and assembly techniques.

Results of the efforts required under this subtask shall be used to resolve integration, test and operational anomalies.

C.3.3.2 Subtask 3.2 - Systems Modification

The Contractor shall conduct systems engineering evaluations which shall result in recommendations for beneficial adaptations of existing system configurations for other missions being considered by the SSDD.

Work to be performed under this subtask shall include, but may not be limited to, (a) investigate the engineering feasibility of low-cost rocket vehicles being launched and recovered in the ocean, (b) complete systems engineering tasks involved in the maintenance and enhancement of existing spacecraft and aerospace systems, (c) provide systems engineering inputs to reviews and evaluations, and (d) participate in the development and maintenance of respective system baselines.

Deliverables under this subtask, (which shall include but may not be limited to diagrams, lists, trade-off studies, and evaluation results), shall be documented in formal and informal technical reports and memoranda. Formal reports generated under this subtask shall be submitted in accordance with DD Form 1423, CDRL Number A012, Technical Reports.

C.3.3.3 Subtask 3.3 - Systems Application Engineering

The Contractor shall perform systems applications engineering efforts for existing and advanced spacecraft and aerospace systems. Engineering efforts to be performed under this subtask shall include, but may not be limited to analyzing, defining, developing, evaluating, and controlling (a) bus architectures, their protocols and throughput characteristics, (b) subsystem design implementations, (c) fail-safe/fault-tolerant provisions, (d) spacecraft autonomy enhancement, (e) functional interfaces among subsystems, (f) interface circuit configurations, (g) interface signal level requirements, and (h) internal power distributions and revised power budgets.

Deliverables under this subtask shall include formal reports in the form of design packages which shall be submitted in accordance with DD Form 1423, CDRL A013, System Design Packages.

C.3.3.4 Subtask 3.4 - Performance Analysis

The Contractor shall perform experiment and payload performance analysis as well as troubleshooting and data analysis for both space and aerospace systems and subsystems. Analysis of performance may include pre-operational, operational, and post-operational mission phases. The work to be performed under this subtask shall include, but may not be limited to, (a) analysis of mission data to determine subsystem and system performance characteristics, (b) recovery, reduction and analysis of mission data, (c) development of systems necessary for collection, reduction and analysis of experiment data, (d) provision of real-time problem analysis and resolution for operational missions, (e) analysis of mission data to determine the nature of faults or performance-limiting factors, and (f) development of problem solutions, including work-arounds, special analysis software, and flight software or hardware upgrades to maximize mission performance.

C.3.3.5 Subtask 3.5 - Integrated Logistics Support (ILS)

The Contractor shall apply analytical techniques directed toward ensuring cost effective support of equipment and systems, (including the equipment/system support environment and resources) for their entire life cycle. The Contractor's primary goals under this subtask shall be (a) to influence the system/equipment design process by development of design for supportability requirements, evaluating the consequences of design decisions and proactive participation in the design and design review process, or products; (b) to develop a support plan which allows achievement of specified supportability and operational objectives over the life cycle of the system/equipment; (c) to implement the support plan, and (d) to monitor the effectiveness and appropriateness of the support plan once implemented.

The work to be performed under this subtask shall include, but may not be limited to: (a) ILS planning; (b) Logistics Support Analysis; (c) Life Cycle Cost Analysis; (d) Reliability design, evaluation and monitoring; (e) Maintainability design, evaluation and monitoring; (f) maintenance and maintenance planning; (g) design and development of technical data, manuals and handbooks; (h) design and development of training and training documentation/material; (i) identification of skills and manpower requirements, prerequisites and sources; (j) identify requirements and resources to satisfy packaging, handling, storage and transportation needs; (k) identify, quantify, locate, purchase and replenish spare and repair parts; (l) minimize need for, identify, purchase and replenish support and test equipment; (m) identify requirements, analyze existing, and define requirements for new facilities; and (n) identify,

examine and make recommendations concerning computer based systems for diagnostics, training, and on-line documentation.

Analyses and reports generated as deliverable under this subtask shall be submitted in accordance with DD Form 1423, CDRL A014, Integrated Logistics Support.

C.3.4 TASK 4 - SYSTEMS DESIGN AND DEVELOPMENT

The Contractor shall design, develop, and fabricate selected proof-of-concept, engineering models, and operational systems for NRL space and aerospace applications. These systems shall include, but may not be limited to, (a) Command, Control, Computer and Support (C³S) systems and (b) Experiment and Payload (EPL) systems. All systems development efforts shall be performed in accordance with the appropriate requirements as found in SSDD document STC-D-001.

C.3.4.1 Subtask 4.1 – Communications, Command, Control, Computer, Intelligence, Reconnaissance and Surveillance (C4ISR) and Support Systems Design and Development

The Contractor shall analyze, design, fabricate, test, deliver and provide integration and testing functions for selected spacecraft and aerospace systems which shall include, but may not be limited to, (a) system controllers, (b) data acquisition and processing systems, (c) telemetry and control systems, (d) communications systems, (e) electrical power systems, (f) data storage systems, (g) databases, (h) command and control software, (i) data transfer systems, (j) waveform software and (k) structures and mechanism systems.

The Contractor shall initiate the design (which shall include defining electrical and mechanical interfaces, critical operational parameters, weights and volumes) of these C4ISR and support systems for spacecraft, launch vehicles, satellite ground stations and aerospace systems. The required design effort shall include developmental testing and the acquisition of materials and test equipment. Testing shall include, but may not be limited to, breadboarding, prototyping, exposure to critical environments, and support to capability demonstrations. The Contractor shall develop integration plans and procedures for the various components, and shall perform the integration with the spacecraft, launch vehicle and tactical platform.

The Contractor shall present the completed design effort for each subsystem and mission application at a Critical Design Review (CDR). Upon approval of the CDR, the Contractor shall initiate subsystem fabrication and assembly, which shall include various ancillary, test and other items required to complete system development. The Contractor shall continue to analyze, test and integrate engineering changes, consistent with contract requirements, ensuring on a continuing basis throughout

the fabrication and assembly that the design is feasible, sound, and cost effective.

C.3.4.2 Subtask 4.2 - Experiment and Payload (EPL) Systems Design and Development

The Contractor shall analyze the scientific/mission goals of an experiment or payload as defined by NRL and recommend experiment or payload approaches and architectures. The Contractor shall develop experiment or payload performance estimates, and shall identify requirements for data handling, experiment control, electrical power, thermal loads, mass and volume. The Contractor shall identify and define experiment and payload environmental constraints and requirements such as vibration, pressure, radiation, contamination, and EMI. The Contractor shall prepare detailed experiment definitions and specification documents for experimental hardware and software, payloads, flight software, ground support equipment, and support and analysis software.

The Contractor shall design, develop, construct, produce and test experiments and payloads for flight on rocket, balloon, UAV, aircraft or satellite in accordance with performance characteristics provided by the Government. Such test experiments and payloads will be reviewed and approved by the COR.

The Contractor shall develop and fabricate electronics and for various payloads which shall include, but may not be limited to, (a) experiment control, (b) scientific data capture and processing, (c) housekeeping data capture, and (d) command telemetry functions. The Contractor shall also develop and fabricate specialized auxiliary payload equipment and instrumentation, which shall include, but may not be limited to, (a) operation monitoring systems, (b) thermal control systems, and (c) specialized sensors or data acquisition systems.

The Contractor shall develop and construct laboratory experiments, which shall include, but may not be limited to, (a) flight equipment proof-of-concept demonstrations, (b) sensor characterization, and (c) component qualification and calibration. Laboratory experiments shall include all applicable environmental, control, safety, data collection and data analysis hardware and software.

The Contractor shall define, design, develop and test software for experiments and payloads which shall include, but may not be limited to, (a) embedded software specific to experiments, and (b) test and verification software which may be required during development, test or integration of experiments and payloads. Pursuant to this requirement, the Contractor shall also define, document and perform hardware and software integration, debug, test qualification, and acceptance and verification efforts at both NRL and off-site locations.

The Contractor shall identify testing requirements for efforts which shall include, but may not be limited to (a) mission performance, (b) EMI/EMC, (c) thermal, (d) shock, (e) vibration, and (f) vacuum testing efforts. The Contractor shall document test requirements and publish test plans and procedures which define the evaluation and qualification of experimental payloads and experiments. The Contractor shall identify instrument integration requirements and provide the COR with experiment and payload integration plans and procedures. The Contractor shall document test activities and conclusions, and shall submit this information in accordance with DD Form 1423, CDRL A009, Test Plans.

The Contractor shall provide upgrade and modification definition, development, design and implementation efforts for payload and experiment modifications where modifications or upgrades to existing payloads or experiments are determined appropriate for carrying out ongoing scientific investigations.

C.3.5 TASK 5 - SYSTEMS EFFECTIVENESS

The Contractor shall provide the necessary resources to perform the following systems effectiveness efforts:

C.3.5.1 Subtask 5.1 - Reliability, Maintainability and Availability Engineering

The Contractor shall evaluate the inherent and achieved reliability, maintainability and availability (RMA) characteristics of the various space and aerospace systems developed by the SSDD. The Contractor shall evaluate overall system RMA potential, compare this potential to the RMA requirements, and recommend RMA enhancement efforts where applicable. The Contractor shall also conduct RMA trade-offs among competing design concepts. The required analyses shall be performed in accordance with established SSDD procedures. The Contractor shall provide a monthly status report of RMA engineering efforts which shall include (a) a summary of completed analyses with identification of unresolved design issues, and (b) a schedule for analyses yet to be performed. The required monthly reports shall be submitted in accordance with DD Form 1423, CDRL A015, RMA Trade Studies.

(a) Subsystem Level Reliability Engineering - The Contractor shall conduct reliability engineering analyses of the SSDD subsystem level designs in accordance with STC-D-001. The reliability analyses to be performed shall include, but may not be limited to (a) Failure Modes, Effects and Criticality Analyses; (b) Electrical Stress Analyses; (c) Reliability Models and Predictions; and (d) Failure Rate Calculations. The Contractor shall identify areas where subsystem reliability may be improved and provide a description of the means available to achieve this improvement. Results of these analyses shall be documented in formal reports and shall be submitted under DD Form 1423, CDRL A016, Subsystem Reliability Engineering Reports. Where previous analyses exist, the Contractor shall revise and refine the previous reliability engineering reports.

The required reliability reports shall incorporate any updated Failure Mode Effects and Criticality Analysis (FMECA), stress analysis, reliability prediction and failure rate calculations as described in the following paragraphs.

(i) Failure Mode, Effects and Criticality Analyses (FMECA): The Contractor shall prepare subsystem FMECAs to identify potential failure modes and evaluate their effect on the operation of the subsystem. The Contractor shall verify redundancy implementations, identify any single point failure modes and prepare design modification recommendations that would lessen the impact of failure occurrence on subsystem operation. The criticality of each failure mode shall be derived to provide a quantitative means of evaluation. The Contractor shall also modify these analyses to reflect data collected as a result of testing. The Contractor shall assure that subsystem level FMECAs are capable of integration into the system level FMECA with minimal effort.

(ii) Electrical Stress Analyses: The Contractor shall perform subsystem circuit stress analyses based on the available design and test data. These analyses shall identify any parts where individual part electrical/thermal stresses may approach or exceed the maximum levels allowed by SSDD high reliability derating criteria contained in STC-D-001. The Contractor shall also perform a detailed stress analysis on each part and prepare recommendations for resolving part applications where the high reliability derating criteria are exceeded.

(iii) Reliability Models and Predictions: The Contractor shall prepare subsystem level reliability block diagrams and mathematical models to reflect the subsystem design baselines, mission success criteria and FMECA information developed under Subtask 5.1(a)(i), above. The Contractor shall modify reliability predictions through the application of functional subassembly failure rates and operating/nonoperating mission times in the mathematical models. The subsystem level reliability block diagrams and mathematical models shall be functionally and operationally compatible with appropriate system level reliability model to permit maximum integration and use of the subsystem level diagrams and math models in the system level reliability models.

(iv) Failure Rate Calculations: The Contractor shall derive subassembly failure rates employing MIL-HDBK-217 augmented by direct applicable test data, when available. The Contractor shall modify subassembly failure rates as necessary to reflect the results of both the applicable stress analysis and the applicable FMECA. The Contractor shall also derive subassembly operating/non-operating times to reflect mission operational time lines.

(b) System Level Reliability Engineering - The Contractor shall generate, refine and maintain system block diagrams and mathematical models that reflect system level redundancy implementations, system success criteria and mission operating time lines. The Contractor shall conduct system level reliability analyses employing the system level reliability mathematical models and the subsystem

reliability analysis results described in subtask C.3.5.1(a). System level reliability analyses shall include updated FMECAs with emphasis on single point failures to enable assessment of system reliability and identification of further reliability improvements. The system level FMECA shall be performed in accordance with the requirements established in STC-D-001.

(c) Design Verification Engineering - The Contractor shall perform worst-case performance analyses on NRL electronic circuits to verify compliance with SSD-D-AS210B. The required analyses shall include, but may not be limited to, (a) transistor worst-case current gains analyses, (b) worst-case timing analyses, (c) power converter worst-case analyses, and (d) maintainability and availability analyses, as described in greater detail below. Worst-case analyses shall be submitted in accordance with DD Form 1423, CDRL A017, Worst Case Analyses.

(i) Transistor Worst-Case Current Gains Analyses: The Contractor shall verify that each transistor application has sufficient gain margin under worst-case conditions. In addition, the Contractor shall modify the existing subsystem gain analyses as necessary to reflect changes incorporated in the unit or subsystem designs.

(ii) Worst-Case Timing Analyses: The Contractor shall perform worst-case timing analyses on digital circuits. The Contractor shall identify and evaluate all instances of noncompliance with the criteria of SSD-D-AS210B for possible resolution. The Contractor shall provide recommendations for resolving timing noncompliances to the COR.

(iii) Power Converter Worst-Case Analyses: The Contractor shall perform worst-case analyses of SSDD power converters to determine any instances of performance or stability characteristics which do not comply with the criteria of SSD-D-AS210B. The Contractor shall identify all nonconformances in the analyses for resolution by the COR.

(iv) Maintainability and Availability Analyses: The Contractor shall conduct maintainability and availability analyses to project spacecraft replenishment rates, aerospace logistics support requirements and overall systems life cycle cost (LCC) characteristics.

C.3.5.2 Subtask 5.2 - Quality Assurance Engineering

The Contractor shall support the production of NRL space and aerospace units and systems with a quality assurance program in compliance with SSDD requirements, including SSD-D-AS303, STC-D-001, SSD-D-AS214, and SSD-D-AS322. The Contractor shall provide Quality Assurance functions which shall include, but may not be limited to, (a) producibility and inspectability inputs to the design phase and inspections, (b) procedure monitoring, (c) nonconforming material controls, (d) calibration controls, and (e) test audits and implementation of corrective action throughout the fabrication, assembly and test of SSDD spacecraft and aerospace units and subsystems. The Contractor shall also participate in system level flight readiness reviews (FRR) and flight worthiness reviews (FWR) by providing QA inputs to the FRR/FWR data packages.

The Contractor shall provide QA engineering efforts to support subsystem level development. This support shall include, but may not be limited to, (a) performing QA engineering functions for the mechanical and electrical design engineering groups of the SSDD; (b) developing inspection flow plans to assist quality control inspection personnel; (c) reviewing contractor, subcontractor and vendor QA plans and procedures to determine compliance with SSDD requirements and participating in on-site surveys; (d) participating in system and subsystem design reviews; (e) assisting in the preparation of part specifications, drawings and source control drawings; (f) providing quality-related inputs to the Parts, Materials and Processes (PMP) group; (g) providing QA efforts during the fabrication and testing of subassemblies, assemblies and subsystems; and (h) participating in software peer reviews and inspections.

C.3.5.3 Subtask 5.3 - Parts Engineering

The Contractor shall perform parts engineering efforts to assure that the appropriate SSDD parts selection control and testing requirements as delineated in STC-D-002, STC-D-009, STC-D-010, SSD-D-AS139 and SSD-D-AS214 are reflected in the subsystem designs and hardware produced for SSDD spacecraft and aerospace systems. In addition, the Contractor shall test and evaluate parts to determine their performance and environmental application potential and limitations. The parts engineering tasks shall include, but may not be limited to:

- (a) Searching for parts designated for use by SSDD Programs to verify their adequacy for the SSDD application, including qualification status, availability, and radiation susceptibility;
- (b) Identifying and evaluating potential substitute parts where the qualification listing and/or construction make contemplated parts questionable for SSDD applications;
- (c) Developing recommendations for qualification and/or high reliability processing programs where SSDD requirements indicate the need for reliability verification and/or improvement via screening and test;
- (d) Generating part Specification Control Drawings (SCDs) to control critical part parameters or

to invoke special part processing and/or testing requirements;

(e) Performing vendor surveys and evaluating critical part manufacturers to ascertain their capability to provide parts consistent with SSDD reliability, performance and schedule requirements;

(f) Evaluating specific parts based on an analytical study of the construction of the devices using state-of-the-art dissection techniques, microphotography, Scanning Electron Microscopy (SEM) and Energy Dispersive Spectroscopy (EDS) and preparing formal reports of conclusions and recommendations upon completion;

(g) Interfacing with part vendors/manufacturers who require assistance in implementing SSDD requirements on process controls, manufacturing and test environments, and screening or qualification testing. Research, evaluation, selection, review and analyses results shall be presented as formal reports on each subject part;

(h) Generating Nonstandard Part Approval Requests (NSPARs) for those parts which cannot be identified as SSDD approved;

(i) Generating Candidate Parts Lists (CPLs) and documenting the results of subsystem/unit parts list reviews;

(j) Maintaining the Qualified Parts List (QPL), SSD-D-AS139;

(k) Maintaining the Parts Program Requirements and Guidelines document, SSD-D-AS214;

(l) Evaluating the characteristics of the operational radiation environment and recommending modifications to the specified hardness environment;

(m) Maintaining communications with the national radiation test network to obtain current information of tests and manufacturers process or technology revisions; and

(n) Conduct total dose radiation tests and Single Event Upset (SEU) susceptibility tests.

C.3.5.4 Subtask 5.4 - Material and Processing Engineering

The Contractor shall conduct a review of specific materials and processes contemplated for use by NRL. The Contractor shall evaluate materials for their suitability for use in the environment and for their intended application to determine any potential development constraints relating to toxicity, flammability and high vacuum atmospheric environment, specifically for minimization of Collected Volatile Condensable Materials (CVCN) and Total Mass Loss (TML). The Contractor shall conduct detailed material property analyses and process development efforts. Material property analyses shall define the applicability of the material in question for use of SSDD programs and, if necessary, determine and recommend acceptable substitutions. Process development efforts shall include evaluation of production techniques, process controls, handling procedures, and state-of-the-art applications for the control of part, assembly or system reliability. The Contractor shall document the results of material evaluations and process engineering efforts in formal reports which define the results and recommendations.

C.3.5.5 Subtask 5.5 - Failure Analysis

The Contractor shall perform failure analyses on parts, subassembly units and subsystems which are identified by NRL. Failure analyses shall be conducted to the extent necessary to determine the most probable cause(s) of failure, which may include analyses ranging from a simple witnessing or deduction of the cause of failure to a comprehensive analysis of the failed hardware. The Contractor shall determine the appropriate failure analysis approach using such evaluation techniques as (a) radiographic examination, (b) micro probing, (c) dissection, (d) cross sectioning, (e) decapsulation, (f) SEM, (g) plasma etching, (h) EDS, or other tests as necessary to isolate the failure mechanism. The Contractor shall document the comprehensive failure analyses in formal failure analysis reports, the results of which shall be submitted in accordance with DD Form 1423, CDRL A018, Failure Analysis.

(a) Failure Analysis Engineering - The Contractor shall evaluate failures, troubles and/or malfunctions that are directly related to the design and test program. The purpose of this requirement is to assure that all failures observed are reported, evaluated from the reliability and operational viewpoints, analyzed, and then acted upon. The Contractor shall also evaluate design changes which may prevent recurrence of the failure mode and, therefore, improve system reliability.

(b) Corrective Action/Closeout - The Contractor shall provide the results of failure analysis engineering efforts to NRL for processing through the SSDD Failure Reporting and Corrective Action (FRACA) system to facilitate closeout of the corrective action.

C.3.5.6 Subtask 5.6 - Facility Systems Effectiveness Support

The Contractor shall study, evaluate, recommend and implement improvements to enhance productivity and quality of the development work being performed in the NRL fabrication, design and test facilities.

C.3.6 TASK 6 - FABRICATION ACTIVITIES

The Contractor shall perform packaging design, material acquisition and control, fabrication and assembly, quality assurance, and acceptance test for units of the various SSDD spacecraft and aerospace systems.

C.3.6.1 Subtask 6.1 - Packaging Design

The Contractor shall employ NRL-provided design documentation (e.g., schematic diagrams and parts lists) to perform the packaging design and layout efforts necessary to fabricate both PWB housings and other machined items which are necessary to assemble the PWBs and units. The Contractor shall provide electrical design engineering effort to the packaging design task and shall coordinate all efforts under this subtask closely with SSDD.

The Contractor shall analyze PWB and housing designs to verify conformance with SSDD-specified thermal and dynamic environment and design margin criteria. The Contractor shall place special emphasis on packaging design considerations directed toward achievement of stringent EMI/EMC objectives. The Contractor shall guarantee that all contractor-generated design documentation (including assembly drawings and machined items detailed drawings) (a) shall conform to engineering drawing practices per ANSI standards, and (b) shall be controlled in accordance with the SSDD Configuration Management Plan, Document No. SSD-D-005J, and applicable program-specific CM requirements.

C.3.6.2 Subtask 6.2 - Material Acquisition and Control

The Contractor shall acquire the specialized parts, components and chassis to fabricate space and aerospace units and systems. The Contractor (a) shall inspect, test and document that the materials conform with approved standards, and (b) shall maintain these records so that specific parts electrical test performance can be recalled for future evaluation. The Contractor shall maintain a purchasing approved by DCMAO.

The Contractor shall maintain accepted material in segregated and controlled stores with traceability to the acquisition records, the design revision level and the inspection results. The Contractor shall also provide kitting and other material control functions including packaging and shipment of individual material items and/or material lots requested by the COR. Kitting shall also be accomplished in conformance with SSDD forward-traceability requirements as specified by SSD-D-AS214, SSD-D-AS303 and other applicable program requirements.

C.3.6.3 Subtask 6.3 - Fabrication and Assembly

The Contractor shall perform manufacturing operations necessary for production of NRL space and aerospace units and systems. The Contractors manufacturing process shall be in compliance with SSD-D-AS139, Qualified Parts List; and product assurance/quality assurance documents including STC-D-0001, and SSD-D-AS303. All manufacturing processes shall be fully documented and formally controlled to assure consistent results.

C.3.7 TASK 7 - DEMONSTRATIONS AND EXPERIMENTS

The Contractor shall perform Advanced Technology Demonstrations (ATD), Advanced Concept Technology Demonstrations (ACTD), Advanced Warfighting Experiments, and other exercises as directed by the COR. The Contractor shall design experimental prototype systems, transport them to demonstrations, and operate the systems in the field. The Contractor shall generate reports detailing the effectiveness of the experimental systems at the exercise and make recommendations on possible improvements, which shall be submitted in accordance with DD Form 1423, CDRL A019, Experiment Reports.

(1 Data Item)

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A. CONTRACT LINE ITEM NO. 0002,0004,0006,0008,0010		B. EXHIBIT A		C. CATEGORY: TDP TM OTHER			
D. SYSTEM / ITEM Space/Aerospace Systems R&D		E. CONTRACT / PR NO. 81-8034-00		F. CONTRACTOR TBD RFP N00173-01-R-JW01			
1. DATA ITEM NO. A001	2. TITLE OF DATA ITEM Cost/Performance/Business Reports		3. SUBTITLE				
4. AUTHORITY (Data Acquisition Document No.) See Block 16.		5. CONTRACT REFERENCE SOW C.3.1.2		8. REQUIRING OFFICE NRL Code 8101.1			
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED N/A	10. FREQUENCY See Block 16.	12. DATE OF FIRST SUBMISSION See Block 16.	14. DISTRIBUTION			
9. APP CODE See Blk 16.		11. AS OF DATE 0	13. DATE OF SUBSEQUENT SUBMISSION See Block 16.	a. ADDRESSEE	b. COPIES		
10. REMARKS Provide business reports, including but not limited to: INSTRUCTIONS FOR MONTHLY COST AND PERFORMANCE REPORTING REQUIREMENTS This report shall specify: 1. Contract Number; 2. Reporting Period Covered by Report; 3. Total Amount Funded for Contract; 4. *Total Amount Invoiced to Date; 5. *Total Amount Invoiced for this Reporting Period ; 6. Estimated Cost to complete - with explanation if more than Total Amount Funded for Contract (See # 3, above); 7. Schedule Status - indicate if efforts are on schedule, or if not, indicate reason(s) for delay and how it affects final delivery; 8. Technical Progress - brief narrative indicating technical progress made, significant accomplishments or meetings attended and/or participated in; 9. Briefs/Reports generated; 10. Travel Activity; 11. Plans for next month; 12. Technical problem areas and potential solutions. *This shall also include a breakdown by ACRNs prorated in proportion to the unliquidated balance. (See Section G.) SPECIFIC REPORTING REQUIREMENTS FOR CDRL A001 REPORTS (A) Financial Reports: In accordance with Contract Section C.3.1.2(c), the Contractor shall provide Financial Cost and Performance Reports on a monthly basis beginning on the 45th DAC and by the 20th day of each month thereafter. Format: In accordance with DID DI-F-6010A and shall include the information required in Enclosure (2) to DD Form 1423. (B) Contract Work Breakdown Structure Reports: In accordance with Contract Section C.3.1.2, the Contractor shall provide a Contract Work Breakdown Structure Report on a One Time with Revisions (One/R) basis on the 45th DAC with revisions submitted by the 20th day of each month, as applicable. COR approval is required for the CWBS. Contractor shall maintain an up-to-date CWBS and shall submit updates to the COR for approval as revision occur.				COR Code 8101.1		1	1
				ACO (trx. letter only)			1
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G. PREPARED BY James P. Waldenfels		H. DATE 11/29/00		I. APPROVED BY			
J. DATE							

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TOTAL PRICE**

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D. SYSTEM / ITEM Space/Aerospace Systems R&D		E. CONTRACT / PR NO. 81-8034-00		F. CONTRACTOR TBD RFP N00173-01-R-JW01																	
1. DATA ITEM NO. A004	2. TITLE OF DATA ITEM Technical Reports			3. SUBTITLE (A) Program Documentation																	
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.2.1(a)&(c); C.3.2.4(h)		6. REQUIRING OFFICE NRL Code 8101.1																	
7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ	14. DISTRIBUTION																	
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1. DATA ITEM NO. A005	2. TITLE OF DATA ITEM Technical Reports			3. SUBTITLE (B) Program Briefings																	
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.2.1(b)		6. REQUIRING OFFICE NRL Code 8101.1																	
7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ*	14. DISTRIBUTION																	
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1. DATA ITEM NO. A006	2. TITLE OF DATA ITEM Technical Reports			3. SUBTITLE (C) Development Specifications																	
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.2.4(a)		6. REQUIRING OFFICE NRL Code 8101.1																	
7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ	14. DISTRIBUTION																	
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				15. TOTAL → 1 2																	
1. DATA ITEM NO. A007	2. TITLE OF DATA ITEM Technical Reports			3. SUBTITLE (D) Interface Control Documents																	
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.2.4(b)		6. REQUIRING OFFICE NRL Code 8101.1																	
7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ	14. DISTRIBUTION																	
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16. REMARKS Contractor's format as approved by COR.				COR Code 8101.1 ACO(trx.ltr only)																	
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G. PREPARED BY James P. Waldenfels		H. DATE 11/29/00	I. APPROVED BY		J. DATE																

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A. CONTRACT LINE ITEM NO. 0002,0004,0006,0008,0010		B. EXHIBIT A		C. CATEGORY: TDP _____ TM _____ OTHER _____		
D. SYSTEM / ITEM Space/Aerospace Systems R&D		E. CONTRACT / PR NO. 81-8034-00		F. CONTRACTOR TBD RFP N00173-01-R-JW01		
1. DATA ITEM NO. A008	2. TITLE OF DATA ITEM Technical Reports			3. SUBTITLE (E) Program Schedules		
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.2.4(c)		6. REQUIRING OFFICE NRL Code 8101.1		
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED	10. FREQUENCY QRTLY	12. DATE OF FIRST SUBMISSION 20th day after Blk. 11	14. DISTRIBUTION		
9. APP CODE NA	NA	11. AS OF DATE 0	13. DATE OF SUBSEQUENT SUBMISSION QRTLY (20th day)	a. ADDRESSEE	b. COPIES	
10. REMARKS Contractor's format as approved by COR. Block 12: First Government fiscal quarter after award.				COR Code 8101.1 ACO(trx.ltr only)	Draft	Final
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				15. TOTAL	1 2	
1. DATA ITEM NO. A009	2. TITLE OF DATA ITEM Technical Reports			3. SUBTITLE (F) Test Plans		
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.2.4(d) & C.3.4.2		6. REQUIRING OFFICE NRL Code 8101.1		
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ	14. DISTRIBUTION		
9. APP CODE NA	NA	11. AS OF DATE ASREQ	13. DATE OF SUBSEQUENT SUBMISSION ASREQ	a. ADDRESSEE	b. COPIES	
10. REMARKS Contractor's format as approved by COR.				COR Code 8101.1 ACO(trx.ltr only)	Draft	Final
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				15. TOTAL	1 2	
1. DATA ITEM NO. A010	2. TITLE OF DATA ITEM Technical Reports			3. SUBTITLE (G) Type B2 Specifications		
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.2.4(e) & (f)		6. REQUIRING OFFICE NRL Code 8101.1		
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ	14. DISTRIBUTION		
9. APP CODE NA	NA	11. AS OF DATE ASREQ	13. DATE OF SUBSEQUENT SUBMISSION ASREQ	a. ADDRESSEE	b. COPIES	
10. REMARKS Contractor's format as approved by COR.				COR Code 8101.1 ACO(trx.ltr only)	Draft	Final
					Reg	Repro
					1	1
				15. TOTAL	1 2	
1. DATA ITEM NO. A011	2. TITLE OF DATA ITEM Technical Reports			3. SUBTITLE (H) Software Development Specifications		
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.2.4(g)		6. REQUIRING OFFICE NRL Code 8101.1		
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ	14. DISTRIBUTION		
9. APP CODE NA	NA	11. AS OF DATE ASREQ	13. DATE OF SUBSEQUENT SUBMISSION ASREQ	a. ADDRESSEE	b. COPIES	
10. REMARKS Contractor's format as approved by COR.				COR Code 8101.1 ACO(trx.ltr only)	Draft	Final
					Reg	Repro
					1	1
				15. TOTAL	1 2	
G. PREPARED BY James P. Waldenfels		H. DATE 11/29/00		I. APPROVED BY		
				J. DATE		

17. PRICE GROUP

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CONTRACT DATA REQUIREMENTS LIST
(2 Data Items)Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0701-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to the above address. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO. 0002,0004,0006,0008,0010		B. EXHIBIT A		C. CATEGORY: TDP _____ TM _____ OTHER _____	
D. SYSTEM / ITEM Space/Aerospace Systems R&D		E. CONTRACT / PR NO. 81-8034-00		F. CONTRACTOR TBD RFP N00173-01-R-JW01	
1. DATA ITEM NO. A012	2. TITLE OF DATA ITEM Technical Reports			3. SUBTITLE (I) Technical Reports	
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.3.3		6. REQUIRING OFFICE NRL Code 8101.1	
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED NA	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ	14. DISTRIBUTION	
9. APP CODE NA		11. AS OF DATE ASREQ	13. DATE OF SUBSEQUENT SUBMISSION ASREQ	a. ADDRESSEE	b. COPIES
16. REMARKS Contractor's format as approved by the COR. If the Contracting Officer directs, the Contractor shall make additional distribution of technical reports in accordance with a supplemental distribution list provided by the Contracting Officer. The supplemental distribution list shall not exceed 250 addresses. The address for DTIC is: Defense Technical Information Center (DTIC), 8725 John J. Kingman Rd., Suite #0944, Ft. Belvoir, VA 22060-6218. Reprints of published articles may be acceptable as technical reports with the concurrence of the COR.				Draft	Final
				15. TOTAL →	
1. DATA ITEM NO. A013		2. TITLE OF DATA ITEM Technical Reports		3. SUBTITLE (J) System Design Packages	
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.3.4		6. REQUIRING OFFICE NRL Code 8101.1	
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED NA	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ	14. DISTRIBUTION	
9. APP CODE NA		11. AS OF DATE ASREQ	13. DATE OF SUBSEQUENT SUBMISSION ASREQ	a. ADDRESSEE	b. COPIES
16. REMARKS Contractor's format as approved by the COR.				Draft	Final
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G. PREPARED BY James P. Waldenfels		H. DATE 11/29/00	I. APPROVED BY		J. DATE

17. PRICE GROUP

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CONTRACT DATA REQUIREMENTS LIST

Form Approved
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A. CONTRACT LINE ITEM NO. 0002,0004,0006,0008,0010		B. EXHIBIT A		C. CATEGORY: TDP _____ TM _____ OTHER _____		
D. SYSTEM / ITEM Space/Aerospace Systems R&D		E. CONTRACT / PR NO. 81-8034-00		F. CONTRACTOR TBD RFP N00173-01-R-JW01		
1. DATA ITEM NO. A014	2. TITLE OF DATA ITEM Technical Reports			3. SUBTITLE (K) Integrated Logistics Support		
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.3.6		6. REQUIRING OFFICE NRL Code 8101.1		
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ	14. DISTRIBUTION		
9. APP CODE NA	NA	11. AS OF DATE ASREQ	13. DATE OF SUBSEQUENT SUBMISSION ASREQ	a. ADDRESSEE	b. COPIES	
18. REMARKS Contractor's format as approved by COR.				COR Code 8101.1 ACO(trx.ltr only)	Draft	Final
					Reg	Repro
					1	1
				15. TOTAL	1 2	

1. DATA ITEM NO. A015		2. TITLE OF DATA ITEM Technical Reports		3. SUBTITLE (L) RMA Trade Studies		
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.5.1		6. REQUIRING OFFICE NRL Code 8101.1		
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ	14. DISTRIBUTION		
9. APP CODE NA	NA	11. AS OF DATE ASREQ	13. DATE OF SUBSEQUENT SUBMISSION ASREQ	a. ADDRESSEE	b. COPIES	
18. REMARKS RMA: Reliability, Maintainability and Availability Contractor's format as approved by COR.				COR Code 8101.1 ACO(trx.ltr only)	Draft	Final
					Reg	Repro
					1	1
				15. TOTAL	1 2	

1. DATA ITEM NO. A016		2. TITLE OF DATA ITEM Technical Reports		3. SUBTITLE (M)SubsystemReliabilityEngineering Reports		
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.5.1(a)		6. REQUIRING OFFICE NRL Code 8101.1		
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ	14. DISTRIBUTION		
9. APP CODE NA	NA	11. AS OF DATE ASREQ	13. DATE OF SUBSEQUENT SUBMISSION ASREQ	a. ADDRESSEE	b. COPIES	
18. REMARKS Contractor's format as approved by COR.				COR Code 8101.1 ACO(trx.ltr only)	Draft	Final
					Reg	Repro
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				15. TOTAL	1 2	

1. DATA ITEM NO. A017		2. TITLE OF DATA ITEM Technical Reports		3. SUBTITLE (N) Worst Case Analyses		
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.5.1(c)		6. REQUIRING OFFICE NRL Code 8101.1		
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ	14. DISTRIBUTION		
9. APP CODE NA	NA	11. AS OF DATE ASREQ	13. DATE OF SUBSEQUENT SUBMISSION ASREQ	a. ADDRESSEE	b. COPIES	
18. REMARKS Contractor's format as approved by COR.				COR Code 8101.1 ACO(trx.ltr only)	Draft	Final
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				15. TOTAL	1 2	

G. PREPARED BY James P. Waldenfels		H. DATE 11/29/00	I. APPROVED BY	J. DATE
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CONTRACT DATA REQUIREMENTS LIST

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO. 0002,0004,0006,0008,0010		B. EXHIBIT A		C. CATEGORY: TDP TM OTHER	
D. SYSTEM / ITEM Space/Aerospace Systems R&D		E. CONTRACT / PR NO. 81-8034-00		F. CONTRACTOR TBD RFP N00173-01-R-JW01	
1. DATA ITEM NO. A018	2. TITLE OF DATA ITEM Technical Reports			3. SUBTITLE (O) Failure Analysis	
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.5.5		6. REQUIRING OFFICE NRL Code 8101.1	
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ		14. DISTRIBUTION b. COPIES Draft Final Reg Repro
9. APP CODE NA	NA	11. AS OF DATE ASREQ	13. DATE OF SUBSEQUENT SUBMISSION ASREQ		
16. REMARKS Contractor's format as approved by COR.				COR Code 8101.1 ACO(trx.ltr only) 15. TOTAL → 1 2	

1. DATA ITEM NO. A019		2. TITLE OF DATA ITEM Technical Reports		3. SUBTITLE (P)ExperimentReports(atATDs andACTDs)	
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.7		6. REQUIRING OFFICE NRL Code 8101.1	
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED	10. FREQUENCY ASREQ	12. DATE OF FIRST SUBMISSION ASREQ		14. DISTRIBUTION b. COPIES Draft Final Reg Repro
9. APP CODE NA	NA	11. AS OF DATE ASREQ	13. DATE OF SUBSEQUENT SUBMISSION ASREQ		
16. REMARKS Contractor's format as approved by COR. The COR will provide reports to Code 5227 as needed. Remark re additional reports in Data Item No. A012 applies.				COR Code 8101.1 ACO(trx.ltr only) 15. TOTAL → 1 2	

1. DATA ITEM NO. A020		2. TITLE OF DATA ITEM Technical Progress Report		3. SUBTITLE (A) Milestone Charts	
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.1.2(a)		6. REQUIRING OFFICE NRL Code 8101.1	
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED	10. FREQUENCY MTHLY	12. DATE OF FIRST SUBMISSION 45 DAC		14. DISTRIBUTION b. COPIES Draft Final Reg Repro
9. APP CODE NA	NA	11. AS OF DATE 0	13. DATE OF SUBSEQUENT SUBMISSION 20th each succeeding mth		
16. REMARKS Contractor's format as approved by COR. The Contractor shall prepare and present major project and task milestone charts which shall reflect the entire set of milestones for each assigned task.				COR Code 8101.1 ACO(trx.ltr only) 15. TOTAL → 1 2	

1. DATA ITEM NO. A021		2. TITLE OF DATA ITEM Technical Progress Report		3. SUBTITLE (B) Monthly Status Reports	
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.1.2(b)		6. REQUIRING OFFICE NRL Code 8101.1	
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED	10. FREQUENCY MTHLY	12. DATE OF FIRST SUBMISSION 45 DAC		14. DISTRIBUTION b. COPIES Draft Final Reg Repro
9. APP CODE NA	NA	11. AS OF DATE 0	13. DATE OF SUBSEQUENT SUBMISSION 20th each succeeding mth		
16. REMARKS Contractor's format as approved by COR.				COR Code 8101.1 ACO(trx.ltr only) 15. TOTAL → 1 2	

G. PREPARED BY James P. Waldenfels		H. DATE 11/29/00	I. APPROVED BY	J. DATE
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CONTRACT DATA REQUIREMENTS LIST

(2 Data Items)

Form Approved
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A. CONTRACT LINE ITEM NO. 0002,0004,0006,0008,0010		B. EXHIBIT A		C. CATEGORY: TDP _____ TM _____ OTHER _____	
D. SYSTEM / ITEM Space/Aerospace Systems R&D		E. CONTRACT / PR NO. 81-8034-00		F. CONTRACTOR TBD RFP N00173-01-R-JW01	
1. DATA ITEM NO. A023		2. TITLE OF DATA ITEM Technical Progress Report		3. SUBTITLE (C) Government Furnished Equipment	
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE SOW C.3.1.2(b)		6. REQUIRING OFFICE NRL Code 8101.1	
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED NA	10. FREQUENCY QRTL	12. DATE OF FIRST SUBMISSION See Block 16.	14. DISTRIBUTION	
9. APP CODE NA		11. AS OF DATE 0	13. DATE OF SUBSEQUENT SUBMISSION 20th each succeed'g qtr	a. ADDRESSEE	b. COPIES
16. REMARKS Re: Block 12: at the end of the first Government fiscal quarter after contract award, plus 20 days. Provide a GFE status report.				15. TOTAL	
				17. PRICE GROUP	

1. DATA ITEM NO. A024		2. TITLE OF DATA ITEM Contractor On-Site Labor Report		3. SUBTITLE	
4. AUTHORITY (Data Acquisition Document No.) NA		5. CONTRACT REFERENCE (Administrative)		6. REQUIRING OFFICE NRL Code 8101.1	
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED NA	10. FREQUENCY MTHLY	12. DATE OF FIRST SUBMISSION See Block 16.	14. DISTRIBUTION	
9. APP CODE NA		11. AS OF DATE 0	13. DATE OF SUBSEQUENT SUBMISSION See Block 16.	a. ADDRESSEE	b. COPIES
16. REMARKS The Contractor shall deliver the On-Site Labor Report no later than five (5) days after the end of each reporting month. The report must include as a minimum the following data: Reporting Period; Contract Number (and Order Number, if applicable); Contract Value; Current Funding; Amount Expended in Current Period; Total Expended to Date; and Date Submitted. Labor (including subcontractors) - Show employee name, number of hours, and total amount billed for contractor employees working on-site at NRL. If the contractor employees worked on multiple tasks (as defined by the COR), the numbers of hours worked on each task must be shown separately.				15. TOTAL	
				17. PRICE GROUP	

G. PREPARED BY James P. Waldenfels		H. DATE 11/29/00	I. APPROVED BY		J. DATE
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DEPARTMENT OF DEFENSE CONTRACT SECURITY CLASSIFICATION SPECIFICATION <i>(The requirements of the DoD Industrial Security Manual apply to all security aspects of this effort.)</i>				1. CLEARANCE AND SAFEGUARDING SER: 022-00	
				a. FACILITY CLEARANCE REQUIRED	
				TOP SECRET	
				b. LEVEL OF SAFEGUARDING REQUIRED	
				SECRET	
2. THIS SPECIFICATION IS FOR: (X and complete as applicable)				3. THIS SPECIFICATION IS: (X and complete as applicable)	
a. PRIME CONTRACT NUMBER		X		a. ORIGINAL (Complete date in all cases)	
b. SUBCONTRACT NUMBER				Date (YYMMDD) 000511	
c. SOLICITATION OR OTHER NUMBER		Due Date (YYMMDD)		b. REVISED (Supersedes all previous specs)	
X 81-8034-00				Revision No.	
				Date (YYMMDD)	
				c. FINAL (Complete item 5 in all cases)	
				Date (YYMMDD)	
4. IS THIS A FOLLOW-ON CONTRACT? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO. If Yes, complete the following:					
Classified material received or generated under _____ (Preceding Contract Number) is transferred to this follow-on contract.					
5. IS THIS A FINAL DD FORM 254? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO. If Yes, complete the following:					
In response to the contractor's request dated _____, retention of the identified classified material is authorized for the period of _____					
6. CONTRACTOR (Include Commercial and Government Entity (CAGE) Code)					
a. NAME, ADDRESS, AND ZIP CODE		b. CAGE CODE		c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code)	
FOR RFP PURPOSES ONLY, NOT VALID FOR ACTUAL CONTRACT AWARD					
7. SUBCONTRACTOR					
a. NAME, ADDRESS, AND ZIP CODE		b. CAGE CODE		c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code)	
N/A				N/A	
8. ACTUAL PERFORMANCE					
a. LOCATION		b. CAGE CODE		c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code)	
N/A				N/A	
9. GENERAL IDENTIFICATION OF THIS PROCUREMENT					
GROUND SYSTEMS SUPPORT					
10. THIS CONTRACT WILL REQUIRE ACCESS TO:					
	YES	NO	11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:		YES
a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION	X		a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY		X
b. RESTRICTED DATA		X	b. RECEIVE CLASSIFIED DOCUMENTS ONLY		X
c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION		X	c. RECEIVE AND GENERATE CLASSIFIED MATERIAL	X	
d. FORMERLY RESTRICTED DATA		X	d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE		X
e. INTELLIGENCE INFORMATION:			e. PERFORM SERVICES ONLY		X
(1) Sensitive Compartmented Information (SCI)		X	f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES		X
(2) Non-SCI		X	g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER		X
f. SPECIAL ACCESS INFORMATION		X	h. REQUIRE A COMSEC ACCOUNT	*X	
g. NATO INFORMATION		X	i. HAVE TEMPEST REQUIREMENTS		X
h. FOREIGN GOVERNMENT INFORMATION		X	j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS		X
i. LIMITED DISSEMINATION INFORMATION		X	k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE	X	
j. FOR OFFICIAL USE ONLY INFORMATION		X	l. OTHER (Specify)		
k. OTHER (Specify)			*SECURE VOICE CAPABILITY REQUIRED.		

12. PUBLIC RELEASE. Any information (classified or unclassified) pertaining to this contract shall not be released for public dissemination except as provided by the Industrial Security Manual or unless it has been approved for public release by appropriate U.S. Government authority. Proposed public releases shall be submitted for approval prior to release.

☐ Direct ☒ Through (Specify):

Commanding Officer, Naval Research Laboratory, Washington, DC 20375-5320, Code 8107.

to the Directorate for Freedom of Information and Security Review, Office of the Assistant Secretary of Defense (Public Affairs)* for review.
 * In the case of non-DoD User Agencies, requests for disclosure shall be submitted to that agency.

13. SECURITY GUIDANCE. The security classification guidance needed for this classified effort is identified below. If any difficulty is encountered in applying this guidance or if any other contributing factor indicates a need for changes in this guidance, the contractor is authorized and encouraged to provide recommended changes; to challenge the guidance or the classification assigned to any information or material furnished or generated under this contract; and to submit any questions for interpretation of this guidance to the official identified below. Pending final decision, the information involved shall be handled and protected at the highest level of classification assigned or recommended. (Fill in as appropriate for the classified effort. Attach, or forward under separate correspondence, any documents/guides/extracts referenced herein. Add additional pages as needed to provide complete guidance.)

Access to classified information is not required for the purpose of submitting a bid/proposal for this statement of work. However, prior to award of contract, the successful contractor will be required to have a TOP SECRET facility clearance, SECRET storage capabilities, and personnel available with DoD granted personnel security clearances commensurate with level of access required for performance of contract.

14. ADDITIONAL SECURITY REQUIREMENTS. Requirements, in addition to ISM requirements, are established for this contract. (If Yes, identify the pertinent contractual clauses in the contract document itself, or provide an appropriate statement which identifies the additional requirements. Provide a copy of the requirements to the cognizant security office. Use Item 13 if additional space is needed.) ☐ Yes ☒ No

15. INSPECTIONS. Elements of this contract are outside the inspection responsibility of the cognizant security office. (If Yes, explain and identify specific areas or elements carved out and the activity responsible for inspections. Use Item 13 if additional space is needed.) ☐ Yes ☒ No

16. CERTIFICATION AND SIGNATURE. Security requirements stated herein are complete and adequate for safeguarding the classified information to be released or generated under this classified effort. All questions shall be referred to the official named below.

a. TYPED NAME OF CERTIFYING OFFICIAL

b. TITLE

c. TELEPHONE (Include Area Code)

TINA SMALLWOOD

Contracting Officer, Security

(202)767-2240/2521

d. ADDRESS (Include Zip Code)

Naval Research Laboratory
 4555 Overlook Ave., SW
 Washington, DC 20375-5320

e. SIGNATURE

Tina Smallwood

17. REQUIRED DISTRIBUTION

- ☒ a. CONTRACTOR
☐ b. SUBCONTRACTOR
☒ c. COGNIZANT SECURITY OFFICE FOR PRIME AND SUBCONTRACTOR
☐ d. U.S. ACTIVITY RESPONSIBLE FOR OVERSEAS SECURITY ADMINISTRATION
☐ e. ADMINISTRATIVE CONTRACTING OFFICER
☒ f. OTHERS AS NECESSARY 1221.11, 1221.4, 8107, 8102

PERSONNEL REQUIREMENTS

GENERAL:

The following is a list of the personnel qualifications required for the subject procurement. A resume must be submitted for all Key Personnel, including those who are identified in the RFP (the Program Manager and the nine personnel filling the Senior Engineer positions identified in the Key Personnel clause) and those who are nominated by the offeror in accordance with Provision L-14, "Volume 1, Technical Management Proposal, the paragraph entitled Minimum And Maximum Nomination Of Additional Key Personnel By The Offeror.

The Government judges that accomplishing the Statement of Work requires personnel with the qualifications indicated below. However, where "strongly desired" or "desired" is included, these requirements are not mandatory, and the minimums are desired minimums. Whether or not proposed personnel satisfy the desired requirements will influence scoring.

It is strongly desired that key personnel possess all the educational and experience qualifications expressed for their positions. In addition, all proposed key personnel must be U.S. Citizens and must be eligible for a SECRET clearance.

It is strongly desired for non-key personnel that the average experience of the group for each position satisfy each of the experience requirements expressed in years. In addition, it is strongly desired that each non-key person satisfy any educational requirement expressed for the position. It is preferable that non-key personnel be U.S. citizens and eligible for SECRET clearance; personnel who lack these qualifications are subject to the approval of the Contracting Officer's Representative.

The foregoing notwithstanding, up to five non-key personnel for the entire non-key personnel staff, in any positions at the contractor's discretion, need not satisfy the educational requirement, provided their experience and other qualifications are acceptable to the COR (and to the evaluation panel during the RFP). The offeror/Contractor shall submit resumes only for these non-key personnel, for non-key personnel who are not US citizens or who lack eligibility for SECRET clearance, and for non-key personnel identified for spot-checking by the Government.

For both key and non-key personnel, relevant experience while or prior to satisfying any educational requirement counts toward experience.

For both key and non-key personnel, where a BS degree is indicated, a bachelor's degree in the same field also qualifies; for example, a BEE degree would be equivalent to a BSEE degree. Where a lower degree is required, possession of a higher degree in the same field also qualifies.

As stated previously (See Section G.XXX), the Government estimates that approximately 1,800,000 labor hours will be required across the 60-month period of performance. The yearly hourly usage will generally be spread evenly over each year of the contract. It is anticipated that the following labor

categories will be required under any resulting contract: (1) Project Manager, (2) Senior Engineer, (3) Senior Systems Analyst, (4) Engineer, (5) Senior Software Engineer, (6) Software Engineer, (7) Reliability Engineer, (8) Technician, (9) Documentation Specialist, (10) Analyst, and (11) Clerical. The following paragraphs address educational and experience requirements and describe typical duties required for each of the labor categories listed above.

(1) PROJECT MANAGER (a key person)

(a) Educational Requirements – It is strongly desired that the Project Manager possess a Bachelors degree from a school of engineering with at least one curriculum accredited by the Accreditation Board for Engineering and Technology (ABET) as a profession engineering curriculum; or a combination of college-level education, training or technical experience that clearly indicates (1) a demonstrable knowledge and skill to develop, schedule, coordinate, and implement effective state-of-the-art system satellite programs, and (2) a demonstrable understanding of both theoretical and practical engineering sciences and techniques and their applications to one of the branches of engineering. The Government prefers that the applicant possess current registration as a professional engineering in any State, the District of Columbia, Guam or Puerto Rico or a Masters degree in Engineering Management or Business Administration.

(b) Experience – It is strongly desired that the Program Manager possess a minimum of ten years of demonstrable relevant experience in managing and directing technical efforts of this scope and of large scale magnitude. The Government desires experience in the management of major spacecraft flight systems.

(c) Typical Duties - The Project Manager will serve as the Contractor's overall manager on this development effort, and shall act as the single point of contact with the Government's Contracting Officer and the Contracting Officer's Representative (COR). The Project Manager's responsibilities will include, but may not be limited to, communicating policies, purposes, and goals of the organization to subordinates and formulating and enforcing work standards, assigning schedules, and reviewing work discrepancies.[moved]. The Project Manager's primary purpose is to ensure effective contract performance, therefore, the Project Manager may not serve in any other capacity under this contract.

(2) SENIOR ENGINEER (some are key personnel by the Key Personnel provision of the RFP)

(a) Educational Requirements – It is strongly desired that each Senior Engineer possess a Bachelor's degree from a school of engineering with at least one curriculum accredited by the Accreditation Board for Engineering and Technology (ABET) as a professional engineering curriculum; or a combination of college-level education, training and technical experience that clearly reveals (1) a demonstrable knowledge of the physical and mathematical sciences underlying professional engineering, and (2) a demonstrable understanding of both theoretical and practical engineering sciences and techniques and their applications to one of the branches of engineering.

The Government prefers that the applicant possess current registration as a professional engineer in any State, the District of Columbia, Guam or Puerto Rico or a Master's degree in Engineering.

(b) Experience – It is strongly desired that each key Senior Engineer possess a minimum of eight years of demonstrable relevant experience in working on technical efforts involving the development, fabrication, test, operation, and documentation of spacecraft systems. (One senior engineer is required by the RFP for each Statement of Work task 3.3.1, 3.3.3, 3.3.4, 3.4.1, 3.4.2, 3.5.1, 3.5.4, 3.6.1, and 3.7. It is strongly desired that non-key Senior Engineers possess, as a minimum, an average of eight years of such experience.

(c) Typical Duties - Senior Engineer(s) will resolve engineering development problems by the application of (a) physical and engineering sciences and mathematics, (b) system development and integration principles, and (c) the principles, techniques and practices of engineering. Work for Senior Engineer(s) will primarily pertain to (1) assessing and demonstrating the effectiveness of new concepts and ideas for equipment in achieving particular mission goals; (2) formulating overall design concepts and criteria which establish the baseline for advancement of state-of-the-art engineering developments; (3) reviewing and assessing overall progress in the development effort; and (4) resolving technical difficulties which can be overcome by changes in characteristics, approach, criteria, and requirements. Senior Engineer(s) will provide technical direction to lower level engineers.

(3) SENIOR SYSTEMS ANALYST:

(a) Educational Requirements – It is desired that Senior Systems Analyst possess as a minimum, a Bachelors degree in engineering, mathematics, computer science, physics, or a related technical discipline. Each Senior Systems Analyst must possess a demonstrable knowledge of the theoretical and practical applications of technology related to the resolution of issues involving space system development and operation.

(b) Experience – It is desired that non-key Senior Systems Analysts, considered as a group, average a minimum of eight years of demonstrable relevant experience in working on technical efforts involving the development, fabrication, test, operation, and documentation of spacecraft systems.

It is strongly desired that any key Senior Systems Analyst nominee possess a minimum of eight years of demonstrable relevant experience in working on the technical efforts described for non-key personnel.

(c) Typical Duties - Senior Systems Analyst(s) work independently, or only under general direction, on complex application problems involving all phases of systems analysis, and shall provide problem solutions. Senior Systems Analyst(s) provide technical or administrative direction for personnel performing development tasks, which includes, but is not limited to, (1) the review of work products for correctness, (2) adherence to design concepts, and (3) users standards for progress in accordance with schedules. Senior Systems Analyst(s) coordinate with the Project Manager to

assure that problems are solved and users are satisfied. Senior Systems Analyst(s) provide technical direction to lower level engineers.

(4) ENGINEER:

(a) Educational Requirements – It is desired that each Engineer possess, as a minimum, a Bachelor's degree from a school of engineering with at least one curriculum accredited by the Accreditation Board for Engineering and Technology (ABET) as a professional engineering curriculum; or a combination of college-level education, training and technical experience that clearly reveals (1) a demonstrable knowledge of the physical and mathematical sciences underlying professional engineering, and (2) a demonstrable understanding of both theoretical and practical engineering sciences and techniques and their applications to one of the branches of engineering. (This equivalent for education satisfies the requirement and does not require identifying such a person for "wild card" treatment in the proposal or describing the equivalent in a numbered note in Attachment (4), Format for Non-Key Personnel.) The Government desires that the applicant possess current registration as a professional engineering in any State, the District of Columbia, Guam or Puerto Rico or a Masters degree in Engineering.

(b) Experience – It is desired that non-key Engineers, considered as a group, average a minimum of three (3) years of demonstrable relevant experience working on efforts of similar technical difficulty as those described in the Statement of Work. It is strongly desired that any key Engineer nominee possess a minimum of three years of demonstrable relevant experience in working on the technical efforts described for non-key personnel.

(c) Typical Duties - Engineers apply knowledge of (1) physical and engineering sciences and mathematics, (2) electrical phenomenon, and (3) the principles, techniques and practices of engineering, to resolve technical problems. The Engineer's work primarily pertains to electrical circuits, electrical elements, equipment, systems, mechanical structures and associated phenomena concerned with electromagnetic, thermal, mechanical, or acoustic energy. Engineers also use information from sensors and test equipment for communication, computation, sensing, control, measurement and navigation. Engineers receive technical direction from one or more senior individuals.

(5) SENIOR SOFTWARE ENGINEER:

(a) Educational Requirements – It is desired that each Senior Software Engineer possess, as a minimum, a Bachelor's degree in an appropriate technical field such as computer science or mathematics. Possession of an advanced technical degree is desirable.

(b) Experience – It is desired that non-key Senior Software Engineers, considered as a group, average a minimum of six years of demonstrable engineering experience. Each Senior Software Engineer must be familiar with software engineering methodologies, processes and practices with specific working knowledge of the FORTRAN, C, and C++ programming languages.

Each Senior Software Engineer must also possess demonstrable domain experience in aerospace, space technologies, command and control systems, embedded systems, ground stations test systems, or avionics systems. It is strongly desired that any Senior Software Engineer key personnel nominee possess a minimum of six years of demonstrable relevant experience in working on the technical efforts described for non-key personnel.

(c) Typical Duties - Senior Software Engineer (1) perform mid-level software development, (2) perform routine programming work which primarily involves high-level language coding tasks as a part of a team, and (3) exercise judgement on details of work and in making preliminary selections and adaptations of coding alternative. Most assignments are typical of a higher level. Senior Software Engineer usually work under limited supervision and receive minimal instructions concerning tasks to be performed and expected results.

(6) SOFTWARE ENGINEER:

(a) Educational Requirements – It is desired that each Software Engineer possess, as a minimum, a Bachelors degree in an appropriate technical field such as computer science or mathematics.

(b) Experience – It is desired that non-key Software Engineers, considered as a group, average a minimum of one year of demonstrable engineering experience. It is desired that each Software Engineer be familiar with software engineering methodologies, processes and practices with specific working knowledge of the FORTRAN, C, and C++ programming languages. It is desired that each Software Engineer also possess demonstrable domain experience in aerospace, space technologies, command and control systems, embedded systems, ground stations test systems, or avionics systems.

(c) Typical Duties – Software Engineer perform entry-level software development and routine programming efforts, which primarily involve high-level language coding tasks as part of a team. Limited exercise of judgement is required on either work details or in preliminary selection and adaptation of coding alternatives. Most assignments will be designed to develop professional work knowledge and may include some work that is typical of a higher level. Software Engineer usually work under close supervision and receive detailed instructions concerning tasks to be performed and expected results.

(7) RELIABILITY ENGINEER:

(a) Educational Requirements – It is desired that each Reliability Engineer possess, as a minimum, a Bachelors degree in engineering, mathematics, physics, or a related technical discipline. The Government desires Reliability Engineers who possess a Master's degree in one of the technical disciplines referenced above.

(b) Experience – It is desired that non-key Reliability Engineers, considered as a group, average a minimum of five years of demonstrable experience in performing reliability, maintainability and failure analysis on a wide variety of analog and digital hardware. The Government desires Reliability Engineers who possess experience in performing the referenced analyses on equipment which will be used in low earth orbiting satellite (e.g., operating in a vacuum environment with temperature variations and radiation levels significantly higher than encountered in normal earth-borne practice). It is strongly desired that any key Reliability Engineer nominee possess a minimum of five years of demonstrable relevant experience in working on the technical efforts described for non-key personnel.

(c) Typical Duties - Reliability Engineer(s) perform mathematical functions and simulations on circuit designs, packaging designs, and thermal designs to determine their inherent reliability, maintainability, and availability. Reliability Engineer(s) review parts lists, test plans, specifications and other documents to ensure a consistent design package that meets environmental and reliability requirements. Reliability Engineer(s) also make recommendations in design, parts selection and testing methodology to improve system performance characteristics, overall reliability and producibility. Reliability Engineers receive technical direction from more senior individuals.

(8) TECHNICIAN:

(a) Educational Requirements - Each Technician shall, as a minimum possess a high school diploma.

(b) Experience Requirements - It is desired that non-key Technicians, considered as a group, average as a minimum five years of demonstrable relevant experience. It is strongly desired that any key Technician nominee possess a minimum of five years of demonstrable relevant experience in working on the technical efforts described for non-key personnel.

(c) Typical Duties - Technicians analyze data, investigate the properties of materials, study operating characteristics and performance of components under various environmental conditions, study the interaction of components and consider the planned use and maintenance of the item being designed. Technicians systematically apply their knowledge and experience to develop new and substantially improved equipment, systems, materials, processes, techniques and procedures which will perform useful functions or be suitable for particular duties. Technicians typically work under the general supervision of engineers and other senior individuals.

(9) DOCUMENTATION SPECIALIST:

(a) Educational Requirements – It is desired that each Documentation Specialist possess, as a minimum, an Associates degree in engineering, mathematics, computer science, or a related technical discipline.

(b) Experience – It is desired that non-key Documentation Specialists, considered as a group, average as a minimum two years of demonstrable relevant experience in performing configuration management activities with both hardware and software on major development efforts. The Government desires that proposed Documentation Specialists hold a Certified Configuration Specialist certificate from the American Defense Preparedness Association.

(c) Typical Duties - Documentation Specialists must be familiar with the identification, control, status accounting, and audit and review requirements of EIA/IS-649 entitled Configuration Management. Documentation Specialists must be knowledgeable of management controls and must understand the implementation and measurement of controls to provide configuration management and document generation functions for the Project Manager. Documentation Specialist(s) assist with the identification of configuration items; ensure that baselines are changed only through the proper configuration control process; perform status reporting; support audits and reviews; and generate/distribute meeting minutes in a timely fashion to identify areas of concern and to track action items that may have been assigned during meetings. Documentation Specialists are able to use both manual and automated techniques in the performance of all required tasks.

(10) ANALYST:

(a) Educational Requirements - Each Analyst shall have a High School diploma, GED, or equivalent life experience.

(b) Typical Duties - Analyst(s) performs various administrative projects, which may require the development of new solutions to department operational issues. Prepares and analyzes data, such as budget/cost estimates, contract specifications, flow charts, and labor hour estimates. Maintains department databases and statistical spreadsheets.

(11) CLERICAL

(a) Educational Requirements - High School diploma, GED, or equivalent life experience (offeror's judgement accepted, no "wild card necessary").

(b) Typical Duties - Clerical workers shall perform administrative and clerical tasks, which shall include, but may not be limited to, word processing, filing, documentation support, and illustration in support of technical efforts.

FORMAT FOR NON-KEY PERSONNEL QUALIFICATIONS

(Expand Names, etc. as needed. Include code or name for corporate affiliation. A Word version of this document is available from waldenfels@contracts.nrl.navy.mil; please make request by December 18, 2000.)

Data for key personnel are not required in this table, but categories with key personnel only are shown for completeness. **However, the offeror must list those key personnel that it is nominating, which are in addition to the key personnel identified by position in this RFP (the program manager and some of the senior engineers).** (Note that for SOW sections where more than one senior engineer is required, only one senior engineer is designated as key in the RFP. Additional senior engineers may be nominated at the discretion of the offeror.) Show hatch marks in “Years Experience” blocks for all nominated key personnel. Do not include any experience for key personnel, whether designated in the RFP or nominated, in the averages shown in the table.

Note that category averages for experience indicate the “desired” minimum average. It is possible the averages proposed for some categories may be below the desired average. This is acceptable, but will tend to lead to a lower score.

Entry of a name in the list signifies possession of qualifications, including desired qualifications, established for the position in a non-key capacity in the Personnel Qualifications attachment, unless the person is identified as a Wild Card (WC) or the missing qualification is described in a numbered note. For example, entry of a name, with no “WC” or note, in Position 9, Documentation Specialist, signifies the person possesses the experience identified in the Personnel Qualifications attachment and holds a certificate from the American Defense Preparedness Association as a Certified Configuration Specialist. Alternately, a “WC” by the name indicates the person does not possess all the desired qualifications and that a resume is attached to the proposal. A numbered note indicates the person is not proposed under the wild card procedure but does not fully satisfy the desired requirements, as briefly described in the note. (The note should describe only the shortfall and not provide compensating experience.) Resumes for non-key personnel should not be provided except (1) for “wild card” personnel and (2) in response to spot checks initiated by the Contracting Officer. There are few absolute requirements for positions unless the position is identified as “key” by the RFP. Therefore, the wild card option will not be needed unless someone in an initially non-key position is nominated as a key person in the proposal. (Results from spot checking may affect the credibility of the whole population of non-key personnel.)

Note that a wild card person may be one of those nominated by the offeror as a key person.

Overview of up to ten “wild card” persons:

	<u>Position</u> <u>#</u>		<u>Name</u>
1			
2			
3			

4			
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7			
8			
9			
10			

#	Position Title	Synopsis of Years of Experience*	Names/Firms/Notes	Years Exper.	SOW Area
1	Program Mgr.	(Key position only)	////////////////////////////////////	////////	////////
2	Senior Engineer	<ul style="list-style-type: none"> 8 years in spacecraft systems development 	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____	____ ____ ____ ____ ____ ____ ____ ____ ____ ____	3.4.1 3.4.1 3.4.1 3.4.1 3.4.1 3.4.1 3.4.2 3.4.2 3.7
		<ul style="list-style-type: none"> Average for Position 2 	////////////////////////////////////		
		<ul style="list-style-type: none"> (List any Senior Engineer nominees for additional key positions here, including SOW area shifted from above.) 		////////	

#	Position Title	Synopsis of Years of Experience*	Names/Firms/Notes	Years Exper.	SOW Area
3	Senior Systems Analyst (List 16* persons.)	<ul style="list-style-type: none"> 8 years in spacecraft systems development 	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	<div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div>	<div>3.1</div> <div>3.3.3</div> <div>3.3.3</div> <div>3.3.4</div> <div>3.3.5</div> <div>3.3.5</div> <div>3.3.5</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.2</div> <div>3.4.2</div>
		<ul style="list-style-type: none"> Average for Position 3 	////////////////////		
		<ul style="list-style-type: none"> (List any Senior Systems Analyst nominees for additional key positions here, including SOW area shifted from above.) 		////////	

#	Position Title	Synopsis of Years of Experience*	Names/Firms/Notes	Years Exper.	SOW Area
4	Engineer	See below:	////////////////////////////////////	////////	////////
	(List 1* person.)	<ul style="list-style-type: none"> 3 years on tasks similar to SOW task 3.3.1 	_____	—	3.3.1
	(List 2* persons.)	<ul style="list-style-type: none"> 3 years on tasks similar to SOW task 3.3.2 	_____ _____	— —	3.3.2 3.3.2
	(List 1* person.)	<ul style="list-style-type: none"> 3 years on tasks similar to SOW task 3.3.6 	_____	—	3.3.6
	(List 7* persons.)	<ul style="list-style-type: none"> 3 years on tasks similar to SOW task 3.4.1 	_____ _____ _____ _____ _____ _____ _____	— — — — — — —	3.4.1 3.4.1 3.4.1 3.4.1 3.4.1 3.4.1 3.4.1
	(List 9* persons.)	<ul style="list-style-type: none"> 3 years on tasks similar to SOW task 3.4.2 	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____	— — — — — — — — — —	3.4.2 3.4.2 3.4.2 3.4.2 3.4.2 3.4.2 3.4.2 3.4.2 3.4.2 3.4.2
	(List 2* persons.)	<ul style="list-style-type: none"> 3 years on tasks similar to SOW task 3.5.2 	_____ _____	— —	3.5.2 3.5.2
	(List 3* persons.)	<ul style="list-style-type: none"> 3 years on tasks similar to SOW task 3.5.3 	_____ _____ _____	— — —	3.5.3 3.5.3 3.5.3
	(List 4* persons.)	<ul style="list-style-type: none"> 3 years on tasks similar to SOW task 3.5.4 	_____ _____ _____ _____	— — — —	3.5.4 3.5.4 3.5.4 3.5.4

#	Position Title	Synopsis of Years of Experience*	Names/Firms/Notes	Years Exper.	SOW Area
	(Engineer, continued) (List 4* persons.)	<ul style="list-style-type: none"> 3 years on tasks similar to SOW task 3.6.1 	<div></div> <div></div> <div></div> <div></div>	<div></div> <div></div> <div></div> <div></div>	3.6.1 3.6.1 3.6.1 3.6.1
	(List 1* person.)	<ul style="list-style-type: none"> 3 years on tasks similar to SOW task 3.6.3 	<div></div>	<div></div>	3.6.3
	(List 5* persons.)	<ul style="list-style-type: none"> 3 years on tasks similar to SOW task 3.7 	<div></div> <div></div> <div></div> <div></div> <div></div>	<div></div> <div></div> <div></div> <div></div> <div></div>	3.7 3.7 3.7 3.7 3.7
		<ul style="list-style-type: none"> Average for Position 4 	<div></div>		
		<ul style="list-style-type: none"> (List any Engineer nominees for additional key positions here, including SOW area shifted from above.) 		<div></div>	
5	Senior Software Engineer. (List 11* persons.)	<ul style="list-style-type: none"> 6 years engineering experience with software familiarity and domain experience 	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	3.1.3 3.1.3 3.4.1 3.4.1 3.4.1 3.4.1 3.4.1 3.4.2 3.4.2 3.4.2 3.7
		<ul style="list-style-type: none"> Average for Position 5 	<div></div>		
		<ul style="list-style-type: none"> (List any Senior Software Engineer nominees for additional key positions here, including SOW area shifted from above.) 		<div></div>	

#	Position Title	Synopsis of Years of Experience*	Names/Firms/Notes	Years Exper.	SOW Area
6	Software Engineer (List 18 persons.)	<ul style="list-style-type: none"> 1 year of engineering experience with software familiarity and domain experience 	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	<div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div>	<div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.1</div> <div>3.4.2</div> <div>3.4.2</div> <div>3.4.2</div> <div>3.4.2</div> <div>3.4.2</div> <div>3.4.2</div> <div>3.4.2</div> <div>3.5.2</div> <div>3.5.2</div> <div>3.7</div> <div>3.7</div>
		<ul style="list-style-type: none"> Average for Position 6 	////////////////////		
7	Reliability Engineer (List 7* persons.)	<ul style="list-style-type: none"> 5 years of reliability, maintainability and failure analysis experience, especially in low earth orbiting satellite environments 	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	<div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div>	<div>3.3.2</div> <div>3.5.1</div> <div>3.5.1</div> <div>3.5.1</div> <div>3.5.1</div> <div>3.5.1</div> <div>3.5.1</div>
		<ul style="list-style-type: none"> Average for Position 7 	////////////////////		
		<ul style="list-style-type: none"> (List any Reliability Engineer nominees for additional key positions here, including SOW area shifted from above.) 		////////	

[illegible]

#	Position Title	Synopsis of Years of Experience*	Names/Firms/Notes	Years Exper.	SOW Area
9	Documentation (List 7 persons.)	<ul style="list-style-type: none"> 2 years experience 	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	3.2.1 3.2.2 3.2.2 3.2.3 3.2.3 3.2.3 3.3.6
		<ul style="list-style-type: none"> Average for Position 9 	<div>////////////////////////////////////</div>		
10	Analyst (List 9 persons.)	<ul style="list-style-type: none"> No experience requirement (Analyst experience is considered exchangeable across the Statement of Work, but the anticipated allocation, for proposal purposes, is shown for information.) 	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	3.1 3.1 3.3.2 3.3.3 3.3.5 3.3.6 3.3.6 3.5.4 3.5.6
		<ul style="list-style-type: none"> Average for Position 10 	<div>////////////////////////////////////</div>		

- 1.
- 2.
- 3.
- etc.